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Augmentation of the IUE Ultraviolet Spectral Atlas
Principal Investigator: Chi-Chao Wu

Under this program, the Principal Investigator (PI) continued observations of normal stars in order to fulfill the following two goals: (1) to provide a stellar library as complete as practical, which will be able to support astronomical research by the scientific community long into the future, and (2) to obtain a sufficient sample of stars to guard against variability and peculiarity, and to allow a finite range of temperature, gravity, and metallicity in a given spectral type-luminosity class combination.

The candidate stars have been selected such that they are not spectroscopic binaries or variables with significant changes in magnitude or color, they have well determined spectral types, and if possible, they have small interstellar reddening. Most of the observations were made with the trail and pseudo-trail techniques, and at optimum exposure, in order to achieve maximum signal-to-noise ratio for the spectra.

The PI and his collaborators have completed the reduction of the data obtained during the IUE twelfth through seventeenth episodes: SALCW, SAMCW, SANCW, SAOCW, SAPCW, and SAQCW. The data are presented in The *IUE Ultraviolet Spectral Atlas, Addendum II*, by C.-C. Wu, F. H. Schiffer, 3rd, and D. M. Crenshaw (see attachment).

This second addendum of the spectral atlas contains 183 stars. Combining with the 315 stars presented in the original spectral atlas (Wu *et al* 1983, *NASA IUE Newsletter* 22), and its first addendum (Wu *et al* 1991, *NASA IUE Newsletter* 43), the stellar library contains 498 stars. It covers spectral types from O3 to M7, with good representation for the main sequence, and reasonably good sample for higher luminosity stars. We believe this porject has fulfilled the two goals mentioned in the first paragraph.

The second addendum contains spectral plots and flux tables (samples are given in the attachment for three stars). Stars earlier that F3 have data from 1150 to 3200 angstroms (have both the SWP and LWP images), and stars later than F6 have data from 1974 to 3200 angstroms (LWP only). The production of Addendum II is essentially complete. Minor cosmetic changes are being made to the plots and tables for a few stars. The paper version will be submitted to the *NASA IUE Newsletter* for publicaiton. The electronic copy will be made available to the IUEDAC and NSSDC.

THE IUE ULTRAVIOLET SPECTRAL ATLAS ADDENDUM II

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I. Introduction

The IUE Ultraviolet Spectral Atlas and the first addendum were published by Wu et al. (1983, 1991) in printed and machine readable versions. This atlas and addendum contain UV spectra of 315 stars with spectral types ranging from O3 to M5 and many spectral type-luminosity class combinations. There were three criteria for selecting these stars: (1) they were not spectroscopic binaries or variables with significant changes in magnitude or color, (2) they must have well-determined spectral types (many are MK standards) and (3) the stars should not be heavily reddened.

Further augmentation of the atlas is desirable to provide a more complete coverage of the spectral type-luminosity class combinations and more than one star per combination. The extra spectral type-luminosity class combinations reduce the need for interpolation. The extra stars within a given combination guard against variability and peculiarity, and allow for a finite range of temperature, metallicity and gravity.

The previous atlas and addendum presented data that were obtained through the eleventh episode under IUE programs with C.-C. Wu and D. Burstein as principal investigators. In this second addendum, we present the spectra obtained by Wu's programs during the twelfth through seventeenth episodes: SALCW, SAMCW, SANCW, SAOCW, SAPCW and SAQCW. During the period between July 1989 and September 1994, Wu observed 183 stars under these programs. Most of these observations are high quality trails or pseudo-trails (multiple exposures in the large aperture).

II. Observations and Reductions

The observations for this atlas were made with the IUE using the Short Wavelength Prime (SWP) and Long Wavelength Prime (LWP) cameras in low dispersion mode. The SWP camera covered the 1150-1974 Å region. The LWP camera covered the 1974-3200 Å region. The IUE cameras have a spectral resolution of about 6 Å in low-dispersion mode. Boggess et al. (1978a, b) presented the first discussion of the IUE scientific instrument and its performance. For more recent updates, readers should consult Sonneborn et al. (1987), Harris and Sonneborn (1987), and Grady and Taylor (1989).

Most of the observations used the trail or pseudo-trail technique to increase the signal-to-noise ratio. These techniques increased the exposure time by moving the target star along the major axis of the large aperture, which is nearly perpendicular to the dispersion direction. In a trailed exposure, the star moves at a constant rate through the large aperture. Generally, we used this method when the total exposure time was less than 10 minutes and the star was within 100

degrees of the Sun. When a star was more than 100 degrees from the Sun or the exposure time for trailing was more than 10 minutes, the pseudo-trail technique provided the increased exposure time. This pseudo-trail technique places the star at several discrete locations (generally 3) along the major axis. The camera takes an exposure at each location without reading out the data while a guide star stabilizes the spacecraft. The widened spectra obtained by these techniques improved the signal-to-noise ratio by collecting more photons and by recording the spectra on more image pixels. The use of more image pixels improved the chance of averaging out the fixed-pattern noise. Spectra through the small aperture provided data in wavelength regions, which contained saturation, low exposure levels, reseaux or other blemishes in the large aperture spectra.

The input for this atlas was the merged spectra, which the IUESIPS production software created on the date of the processing. Turnrose and Thompson (1984), Harris and Sonneborn (1987), and Grady and Taylor (1989) provide detailed discussions of this IUE image processing system. Bohlin and Holm (1980) provided the absolute calibration for the SWP spectra. This calibration was described in more detail by Holm et al. (1982). Cassatella, Lloyd, and Gonzalez Riestra (1987) were the source of the calibration for the LWP data.

The IUE Data Analysis Center (IUE DAC) in the Laboratory for Astronomy and Solar Physics at Goddard Space Flight Center (GSFC) provided the facilities and software for further custom reductions. These reductions included corrections to all fluxes for exposure time and temperature effects. The fluxes of the small aperture spectra are not on an absolute scale due to the uncertainty in the small aperture throughput. The ratio of the large to small aperture fluxes for the same star provided a correction for this uncertainty. This ratio used only the fluxes in regions unaffected by bad data and with measurable signal. The correction placed the fluxes and exposure time of the small aperture spectrum on the same absolute scale as the large aperture spectrum. Multiple spectra of the same star and in the same wavelength range were combined into an averaged spectrum. The combination weighted each spectrum by its exposure time. These averaged spectra excluded any data that contained saturation, reseaux, flagged bright spots or microphonic noise. The final step in the custom reductions was to bin the spectra at 2 Å intervals.

This addendum contains spectra for 183 stars and spectral types from O7 to M6. Stars earlier than F3 have both SWP and LWP data. For stars later than F6, only LWP spectra are presented. Table I catalogues the stars in order of spectral type-luminosity class. Columns (1) and (2) give the HD number and name of the star, respectively. Column (3) gives the spectral type as published in the reference, a code for which appears in Column (4). An explanation of these codes appears at the end of Table I. Columns (5) and (6) contain the right ascension and declination (1950 epoch) for the star. Columns (7) and (9) give V and B-V respectively. The primary source of these photometric data was Mermilliod and Mermilliod (1994). For HD 216399, O'Connell (1973) provided the V magnitude and SIMBAD the B-V. The photometry for HD 219188 came from Turon et al. (1992). In Column (8), an "A" shows that the star has a close neighbor and that the V

magnitude is only for the brighter component. On the other hand, an "AB" in Column (8) indicates that the V magnitude is the combined brightness of both components. The entries in Column (8) are from Mermilliod and Mermilliod (1994). The E(B-V) value, which appears in Column (10), is the observed B-V from Column (9) minus the intrinsic B-V from FitzGerald (1970). The E(B-V) values assume that the intrinsic B-V's for higher luminosity O stars are the same as main sequence stars of the same spectral type. The computations of E(B-V) for spectral types and luminosity classes, which have no intrinsic B-V in FitzGerald, used interpolated values of B-V.

Table I contains information about the IUE images for each star as well. The IUE image number appears in Column (11). Column (12) contains a flag for the aperture, where "L" is the large aperture and "S" is the small aperture. Column (13) defines the observing technique. A "T" in Column (13) means trailed. A number represents the number of exposures in the single image. A value greater than one (like 3 or 4) in the large aperture implies that the image used the pseudo-trail technique. The total exposure time in seconds appears in Column (14). A correction to the exposure time was necessary for the single and multiple (pseudo-trail) exposure spectra, if the time for the individual exposure was 60 seconds or less. The correction accounted for two factors, which can cause errors in the exposure time of 0.5 percent or higher (Schiffer 1980; Crenshaw 1986). First, the IUE on-board computer controls the exposure time in discrete steps of 0.4096 seconds each. Second, the camera takes 0.120±0.015 seconds to turn on at the start of an exposure. Therefore, the actual exposure time is

$$\text{Actual Exposure Time} = [\text{Integer}(t_c/0.4096) \times 0.4096] - 0.120,$$

where t_c is the commanded exposure time in seconds from the IUE observing script. Column (14) contains the exposure time, which is the sum of the actual exposure times from the above equation. For trailed spectra, the exposure time is equal to the trail length in arcseconds divided by the trail rate in arcseconds per second. The actual trail length is 21.4 and 20.5 arc seconds for the short and long wavelength spectrographs, respectively (Panek 1982). The observing script records the trail rate. The result from the exposure time computation, which used the actual trail length, the trail rate and the number of passes, appears in Column (14). The exposure time that is on the observing script and in the IUE image header assumes a trail length of 20 arcseconds and so is not accurate. Column (15) records the temperature of the camera head amplifier during the exposure. This temperature determined a small correction of camera sensitivity (Garhart and Teays 1989).

An indicator of the exposure level appears in Column (16). The values are either a data number (DN) or an overexposure level. The DN values range from 0 to 255. At a DN of 255, the spectrum contains at least one overexposed pixel. The estimated level of overexposure appears as a number followed by "x". For example, 3x means approximately three times overexposed. Three exposure level values are given in Column (16): "E" is for the strongest emission line, "C" is for the continuum, and "B" is for the background regions, which are immediately adjacent to the

spectrum. The Telescope Operator measured these levels during the quick-look analysis of the images and recorded them on the observing script. They serve as a rough indicator of the quality and utility of the data. The emission line indicators do contain errors. For instance, the emission level may be missing for a weak emission component of a P-Cygni profile or Mg II line at 2800 Å. Another common error was to misidentify a less absorbed region in the heavily absorbed spectrum of a late type star as an emission line.

In this addendum, there is a plot for each averaged spectrum. The scales of these plots are the same as in the earlier installments (Wu et al. 1983, 1991). On the page facing each plot, there is a table of average fluxes in 2 Å wavelength bins. In the spectral plots, the regions with bad data (nearly saturated data, reseaux or blemishes) are blank. The values in the flux tables also omit these bad data. The omission of the nearly saturated data is a change from the earlier atlas and addendum. This change is due to the realization that the responses of the cameras are very nonlinear for data values near saturation. In spectral regions where the signal-to-noise ratio is low (e.g., the short wavelength end of the LWP spectra), negative fluxes can appear in the tables.

The merged files for the individual spectra in this addendum have been sent to the IUE DAC and the National Space Science Data Center (NSSDC) at GSFC. If you have an interest in receiving a copy of the data, requests should be sent to the IUE Observatory or the NSSDC.

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Table I - Atlas Stars and Images

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
93204		O5 V((f))	4	10 42 31.0	-59 28 36	8.44	B	0.10	0.42	LWP 24603	L	3	83.20	12.8	C=237 B=35
										LWP 24603	S	1	300.0	12.8	C=5X B=35
										SWP 46596	L	3	255.0	13.2	C=2X B=16
										SWP 46596	S	1	240.0	13.2	C=5X B=16
										SWP 46603	L	3	104.09	9.2	E=157 C=165 B=17
169582		O6 If	4	18 22 57.9	-09 46 57	8.70		0.55	0.87	LWP 26495	L	3	450.0	6.1	C=221 B=45
										SWP 48824	L	3	2160.0	6.1	E=205 C=1.5X B=27
93160		O6 III(f)	5	10 42 10.7	-59 18 44	7.82	AB	0.17	0.49	LWP 23301	L	1	29.78	6.5	C=226 B=33
										LWP 23301	S	1	39.61	6.5	C=170 B=33
										SWP 44925	S	1	80.00	6.8	C=114 B=15
										SWP 44926	L	1	75.00	6.8	C=246 B=15
										SWP 44926	S	1	240.0	6.8	C=2X B=15
93222		O7 III ((f))	5	10 42 40.4	-59 49 41	8.10		0.05	0.37	LWP 23302	L	T	82.00	6.8	C=196 B=35
										LWP 23302	S	1	44.53	6.8	C=236 B=35
										SWP 44927	L	T	139.1	7.2	C=197 B=15
										SWP 44927	S	1	70.00	7.2	C=178 B=15
101205		O7 IIIn((f))	4	11 35 59.9	-63 05 45	6.46	AB	0.04	0.36	LWP 22552	L	T	20.50	8.5	C=213 B=40
										LWP 22552	S	1	7.66	8.5	C=176 B=40
										SWP 44138	L	T	32.10	7.8	C=204 B=17
										SWP 44138	S	1	13.81	7.8	C=165 B=17
162978		O7.5 II((f))	5	17 51 49.3	-24 52 44	6.20		0.04	0.35	LWP 26497	L	T	17.42	6.5	C=214 B=32
										LWP 29195	L	T	17.42	7.8	C=210 B=35
										SWP 48826	L	T	19.26	5.8	E=164 C=168 B=20
										SWP 52148	L	T	19.26	8.2	C=185 B=15
24912	XI PER	O7.5 III(n)((f))	5	03 55 42.8	+35 38 56	4.04		0.02	0.33	LWP 23809	L	T	1.79	9.2	C=182 B=29
										SWP 45474	L	T	4.55	9.2	C=1.5X B=17
										SWP 45474	S	T	0.64	9.2	C=105 B=19
46056		O8 Vn	4	06 28 48.2	+04 52 14	8.24	A	0.20	0.51	LWP 19966	L	T	153.75	13.5	C=204 B=38
										LWP 19966	S	1	74.84	13.5	C=211 B=38
										SWP 41161	L	T	470.81	13.5	C=235 B=18
										SWP 41161	S	1	180.0	13.5	C=222 B=18
112244		O8.5 Iab(f)	4	12 52 59.4	-56 33 54	5.37	A	0.02	0.31	LWP 22440	L	T	7.38	11.8	C=205 B=40
										LWP 22440	S	1	19.54	11.8	C=5X B=40
										SWP 44045	L	T	12.31	11.2	C=241 B=18
										SWP 44045	S	1	9.71	11.2	C=1.5X B=18
46149		O8.5 V	4	06 29 12.9	+05 04 11	7.60		0.17	0.48	LWP 27454	L	T	76.87	11.8	C=203 B=50
										SWP 50072	L	T	181.97	11.8	C=206 B=32

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
57682		O9 IV	5	07 19 38.1	-08 53 00	6.42		-0.19	0.12	LWP 27453	L	T	11.79	11.5	C=222 B=38
										SWP 50071	L	T	13.38	12.2	C=237 B=16
30614	ALF CAM	O9.5 Ia	5	04 49 03.8	+66 15 38	4.29		0.03	0.30	LWP 17592	L	T	3.23	11.2	C=238 B=55
										SWP 38431	L	T	5.99	10.8	C=225 B=30
152247		O9.5 II-III	4	16 50 40.9	-41 33 40	7.17		0.19	0.49	LWP 29234	L	T	61.51	6.5	C=194 B=35
										SWP 52191	L	T	171.20	6.8	C=194 B=15
112784		O9.5 III	8	12 57 02.1	-60 19 26	8.26		0.06	0.36	LWP 26234	L	T	112.76	7.8	C=197 B=38
										LWP 26234	S	1	300.0	7.8	C=5X B=38
										SWP 48486	L	3	104.09	7.5	C=181 B=15
93027		O9.5 V	5	10 41 18.3	-59 52 40	8.72		-0.02	0.28	LWP 22441	L	T	123.0	11.5	C=170 B=38
										LWP 22441	S	1	240.0	11.5	C=5X B=38
										LWP 24604	L	T	184.52	13.2	C=242 B=35
										SWP 44046	L	T	160.50	11.2	C=170 B=18
										SWP 44046	S	1	60.0	11.2	C=140 B=18
										SWP 46597	L	T	214.0	13.2	C=208 B=15
43818		B0 II	9	06 16 16.6	+23 29 27	6.91		0.29	0.58	LWP 17692	L	T	76.87	10.5	C=225 B=37
										SWP 38495	L	T	235.40	10.5	C=215 B=17
219188		B0.5 III	9	23 11 28.0	+04 43 28	7.05		-0.13	0.15	LWP 28292	L	T	27.16	8.5	C=224 B=35
										SWP 50932	L	T	44.94	8.2	C=245 B=15
86606		B1 Ib	7	09 55 17.9	-71 09 02	6.33		-0.06	0.13	LWP 17389	L	T	13.32	11.2	C=205 B=35
										SWP 38208	L	T	16.05	10.8	C=183 B=18
157246	GAM ARA	B1 Ib	7	17 21 10.7	-56 19 58	3.33	A	-0.14	0.05	LWP 26147	L	T	0.92	10.5	C=226 B=36
										SWP 48385	L	T	1.18	9.8	C=224 B=17
										SWP 48385	S	T	0.16	9.8	
1383		B1 II	9	00 15 34.8	+61 26 58	7.63		0.27	0.51	LWP 27029	L	3	79.51	7.8	C=217 B=35
										SWP 49692	L	3	133.58	8.5	C=144 B=15
										SWP 49834	L	3	300.0	7.5	C=1.5X B=15
										SWP 49836	L	3	210.0	8.5	C=200 B=16
47240		B1 II	6	06 35 13.2	+05 00 04	6.15		0.15	0.39	LWP 19965	L	T	26.65	13.5	C=213 B=38
										LWP 19965	S	1	34.70	13.5	C=5X B=38
										SWP 41160	L	T	69.55	13.5	C=193 B=18
										SWP 41160	S	1	34.70	13.5	C=181 B=18
50707	15 CMA	B1 III	7	06 51 23.1	-20 09 40	4.82		-0.22	0.04	LWP 16688	L	T	2.82	8.2	C=232 B=36
										SWP 37270	L	T	3.21	7.8	C=1.5X B=18
										SWP 37270	S	T	0.46	7.8	C=85 B=18

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
46106		B1 V	13	06 28 58.8	+05 03 47	7.93		0.14	0.40	LWP 20205	L	T	143.50	9.5	C=232 B=40
										LWP 20205	S	1	360.0	9.5	C=5X B=40
										SWP 41449	L	T	235.40	9.8	C=208 B=18
										SWP 41449	S	1	100.0	9.8	C=206 B=18
44506		B1.5 IIIn	7	06 18 47.6	-34 07 13	5.54		-0.19	0.06	LWP 17689	L	T	6.15	10.8	C=212 B=34
										SWP 38493	L	T	8.03	9.8	C=220 B=17
74375		B1.5 III	7	08 39 30.8	-59 34 55	4.32	A	-0.12	0.13	LWP 16494	L	T	2.41	7.5	C=210 B=36
										SWP 36721	L	T	3.42	9.5	C=219 B=17
69081		B1.5 IV	7	08 12 05.6	-36 10 11	5.08	A	-0.20	0.05	LWP 16690	L	T	4.72	6.8	C=242 B=41
										SWP 37479	L	T	5.35	6.1	C=240 B=23
83058		B1.5 IV	7	09 32 24.6	-51 01 56	5.00		-0.19	0.06	LWP 21841	L	T	3.84	12.5	C=219 B=40
										LWP 21841	S	1	0.70	12.5	C=162 B=40
										SWP 43214	L	T	4.28	12.8	C=1.5X B=18
										SWP 43217	L	T	3.21	12.8	C=216 B=18
37744		B1.5 V	6	05 38 06.9	-02 51 00	6.21		-0.21	0.04	LWP 26787	L	T	11.28	7.8	C=214 B=34
										SWP 49282	L	T	9.63	7.2	C=228 B=14
										SWP 49285	L	1	2.34	6.1	C=193 B=12
41117	CHI 2 ORI	†B2 Ia	1	06 00 57.0	+20 08 28	4.63		0.27	0.44	LWP 17594	L	T	9.33	11.2	C=210 B=35
										SWP 38433	L	T	32.10	11.2	C=182 B=18
14357		B2 II	9	02 17 38.4	+56 38 14	8.52		0.32	0.53	LWP 21477	L	3	300.0	11.5	C=244 B=40
										LWP 21477	S	1	600.0	11.5	C=3X B=40
										SWP 42697	L	3	1440.0	11.5	C=253 B=48
										SWP 42697	S	1	600.0	11.5	C=156 B=48
127381	SIG LUP	B2 III	7	14 29 14.0	-50 14 11	4.41		-0.19	0.05	LWP 26235	L	T	2.00	7.8	C=200 B=34
										SWP 48487	L	T	2.03	7.8	C=218 B=15
148703		B2 III	7	16 28 06.5	-34 35 50	4.23		-0.17	0.07	LWP 21247	L	T	1.90	8.8	C=210 B=38
										SWP 42466	L	T	1.98	8.2	C=218 B=18
28873	DEL CAE	B2 IV-V	7	04 29 18.1	-45 03 36	5.06		-0.20	0.04	LWP 19963	L	T	4.10	12.8	C=211 B=35
										LWP 19963	S	1	1.52	12.8	C=216 B=35
										SWP 41158	L	T	5.56	13.8	C=1.5X B=18
										SWP 41158	S	1	1.52	13.8	C=1.5X B=18
39291	55 ORI	B2 IV-V	6	05 48 57.1	-07 31 48	5.35		-0.20	0.04	LWP 26788	L	T	4.61	7.2	C=194 B=33
										SWP 49283	L	T	5.08	6.8	C=214 B=17
										SWP 49286	L	1	1.11	6.1	C=166 B=13
122980	CHI CEN	B2 V	7	14 02 59.0	-40 56 27	4.35		-0.20	0.04	LWP 24819	L	T	3.07	7.5	C=250 B=34
										SWP 46857	L	T	2.14	7.2	C=200 B=15

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
31327		B2.5 Ib	6	04 52 59.5	+36 05 25	6.07		0.40	0.55	LWP 23807	L	T	41.00	9.2	C=165 B=38
										LWP 23807	S	1	120.0	9.2	C=3X B=35
										LWP 23808	L	T	66.62	9.2	C=216 B=36
										LWP 23808	S	1	240.0	9.2	C=5X B=35
										SWP 45472	L	3	540.0	8.5	C=3X B=26
										SWP 45472	S	1	300.0	8.5	C=1.5X B=28
										SWP 45473	L	3	195.0	9.2	C=222 B=16
166596		B2.5 III	7	18 09 40.2	-41 20 59	5.46		-0.18	0.04	LWP 21246	L	T	6.41	9.2	C=195 B=38
										SWP 42465	L	T	8.83	7.8	C=190 B=18
25631		B2.5 V	7	04 01 12.4	-20 16 50	6.46		-0.18	0.04	LWP 26786	L	T	15.38	8.5	C=197 B=32
										LWP 26789	L	1	3.98	6.5	C=189 B=30
										SWP 49281	L	T	17.12	7.2	C=199 B=14
										SWP 49284	L	1	4.27	6.1	C=178 B=12
64503		B2.5 V	7	07 50 52.4	-38 43 56	4.49		-0.20	0.02	SWP 37478	L	T	2.94	6.5	C=205 B=23
24432		B3 II	13	03 51 45.8	+48 53 42	6.93		0.58	0.75	LWP 21248	L	3	240.0	8.5	C=2X B=40
										LWP 21248	S	1	600.0	8.5	C=6X B=40
										LWP 21479	L	1	600.0	11.2	C=10X B=40
										LWP 21479	S	1	39.61	11.2	C=130 B=40
										LWP 22049	L	3	118.83	11.2	C=216 B=40
										LWP 22049	S	1	80.0	11.2	C=193 B=40
										SWP 42468	L	3	525.0	8.5	C=112 B=18
										SWP 42468	S	1	200.0	8.5	C=63 B=18
										SWP 42699	L	3	1620.0	11.2	C=219 B=18
134687		B3 IV	7	15 09 27.4	-44 18 47	4.82		-0.18	0.02	LWP 16181	L	T	3.84	7.5	C=227 B=36
										SWP 36869	L	T	6.15	7.5	C=1.5X B=18
66591		B3 V	7	07 59 42.3	-63 25 42	4.81		-0.17	0.03	LWP 16495	L	T	4.61	7.8	C=220 B=35
										SWP 37269	L	T	6.63	7.8	C=239 B=18
170523	DEL 2 TEL	B4 III	7	18 28 20.1	-45 47 37	5.07		-0.13	0.05	LWP 26145	L	T	6.97	11.5	C=195 B=34
										SWP 48383	L	T	14.98	10.5	C=248 B=18
183144		B4 III	6	19 25 15.8	+14 10 47	6.32		-0.07	0.11	LWP 27866	L	T	24.60	11.2	C=190 B=41
										SWP 50519	L	T	53.50	10.5	C=205 B=20
136664	PHI 2 LUP	B4 V	7	15 19 57.2	-36 40 50	4.53		-0.15	0.03	LWP 16179	L	T	3.59	8.5	C=222 B=36
										SWP 36867	L	T	5.62	8.8	C=250 B=19
76538		B5 III	7	08 52 40.1	-60 09 47	5.78		-0.08	0.08	LWP 24601	L	T	13.32	13.2	C=187 B=35
										LWP 24601	S	1	14.63	13.2	C=2X B=35
										SWP 46594	L	T	25.68	13.2	C=197 B=17
										SWP 46594	S	1	24.87	13.2	C=2X B=17

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
23227	DEL FOR	B5 IV	7	03 40 15.5	-32 05 49	5.00		-0.17	-0.01	LWP 15979	L	T	6.28	9.5	C=217 B=34
										SWP 36719	L	T	10.27	8.8	C=223 B=18
25340	35 ERI	B5 V	6	03 58 59.8	-01 41 18	5.28		-0.15	0.01	LWP 27312	L	T	7.69	8.5	C=206 B=36
										SWP 49909	L	T	14.44	7.8	C=235 B=18
74371		B6 Ia	7	08 40 14.7	-45 13 50	5.24		0.21	0.28	LWP 21842	L	T	20.50	12.5	C=215 B=40
										LWP 21842	S	1	9.71	12.5	C=1.5X B=40
										SWP 43215	L	T	74.90	12.8	C=229 B=18
										SWP 43215	S	1	34.70	12.8	C=204 B=18
195810	EPS DEL	B6 III	6	20 30 49.4	+11 07 55	4.03		-0.12	0.02	LWP 21840	L	T	3.59	12.2	C=219 B=35
										LWP 21840	S	1	1.52	12.2	C=249 B=35
										SWP 43213	L	T	6.15	13.2	C=219 B=18
23338	19 TAU	†B6 IV	1	03 42 13.6	+24 18 42	4.30	A	-0.11	0.03	LWP 23805	L	T	3.59	9.8	C=167 B=28
										LWP 23806	L	T	5.89	9.5	C=229 B=28
										SWP 45471	L	T	7.22	8.5	C=184 B=17
										SWP 45471	S	T	1.01	8.5	C=76 B=18
81848		B6 V	7	09 24 40.3	-53 09 42	5.10		-0.12	0.02	LWP 24602	L	T	14.98	13.2	C=203 B=37
										LWP 24602	S	1	7.66	13.2	C=2X B=37
										SWP 46595	L	T	14.98	13.2	C=234 B=16
										SWP 46595	S	1	14.63	13.2	C=2X B=16
115823		B6 V	7	13 17 34.6	-52 29 08	5.47		-0.13	0.01	LWP 19602	L	T	11.27	13.2	C=205 B=38
										LWP 19602	S	1	5.61	13.2	C=1.5X B=35
										SWP 40634	L	T	19.26	13.8	C=220 B=18
										SWP 40634	S	1	8.48	13.8	C=240 B=18
17769	SIG ARI	B7 V	6	02 48 43.7	+14 52 38	5.48		-0.09	0.04	LWP 27239	L	T	13.32	8.2	C=200 B=38
										SWP 49835	L	T	26.75	7.8	C=230 B=15
204770	7 CEP	B7 V	6	21 26 48.3	+66 35 26	5.43		-0.11	0.02	LWP 22197	L	T	14.35	8.2	C=215 B=40
										LWP 22197	S	1	7.66	8.2	C=1.5X B=35
										SWP 43554	L	T	26.75	8.5	C=220 B=15
										SWP 43554	S	1	13.8	8.5	C=210 B=20
173300	PHI SGR	B8 III	13	18 42 32.0	-27 02 38	3.17		-0.11	-0.01	LWP 27867	L	T	2.00	9.8	C=227 B=65
										SWP 50520	L	T	3.75	9.5	C=232 B=35
207971	GAM GRU	B8 III	13	21 50 54.5	-37 36 03	3.00		-0.12	-0.02	LWP 20203	L	T	2.00	9.8	C=234 B=35
										LWP 20203	S	1	0.70	9.8	C=232 B=35
										SWP 41446	L	T	3.75	8.8	C=250 B=18
164865		B9 Ia	8	18 01 09.6	-24 11 08	7.66		0.87	0.87	LWP 27978	L	2	780.0	7.8	C=1.5X B=37
										SWP 50617	L	1	3900.0	7.8	C=212 B=23

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
222439	KAP AND	B9 IVn	10	23 37 56.3	+44 03 25	4.14	A	-0.07	0.00	LWP 22196	L	T	6.41	8.5	C=215 B=38
										LWP 22196	S	1	3.16	8.5	C=160 B=30
										SWP 43553	L	T	12.04	8.8	C=220 B=15
										SWP 43553	S	1	6.02	8.8	C=145 B=20
21790	17 ERI	B9 Vs	10	03 28 08.0	-05 14 43	4.73		-0.09	-0.02	LWP 27318	L	T	9.74	7.2	C=214 B=38
										SWP 49913	L	T	19.26	7.2	C=221 B=16
98664	SIG LEO	B9.5 Vs	10	11 18 33.5	+06 18 13	4.04		-0.06	-0.02	LWP 20548	L	T	7.69	9.2	C=220 B=38
										LWP 20548	S	1	9.71	9.2	C=220 B=35
										LWP 24611	L	T	8.71	9.2	C=225 B=35
										SWP 46601	L	T	14.98	9.8	C=206 B=16
100889	THE CRT	B9.5 Vn	10	11 34 08.6	-09 31 32	4.70		-0.08	-0.04	LWP 24610	L	T	11.27	9.5	C=203 B=35
										LWP 24610	S	1	11.76	9.5	C=1.5X B=35
										SWP 46602	L	T	20.33	9.2	C=200 B=15
166014	OMI HER	B9.5 V	10	18 05 35.4	+28 45 15	3.84		-0.03	0.01	LWP 26014	L	T	7.18	9.5	C=210 B=40
										LWP 26014	S	1	3.57	9.5	C=1.5X B=40
										SWP 48241	L	T	16.05	9.5	C=200 B=13
										SWP 48241	S	1	39.61	9.5	C=5X B=13
92207		A0 Ia	13	10 35 32.3	-58 28 23	5.47		0.50	0.48	LWP 21843	L	T	82.00	12.5	C=231 B=40
										LWP 21843	S	1	300.0	12.5	C=2X B=40
										SWP 43216	L	3	540.0	12.8	C=1.5X B=18
										SWP 43216	S	1	240.0	12.8	C=221 B=18
46300	13 MON	A0 Ib	9	06 30 12.0	+07 22 16	4.50		0.01	0.01	SWP 52192	L	T	42.80	7.2	C=189 B=15
175687	XI 1 SGR	A0 II	10	18 54 22.2	-20 43 24	5.07		0.13	0.13	LWP 26498	L	T	38.95	6.5	C=205 B=35
										LWP 26498	S	1	29.78	6.5	C=1.5X B=35
										SWP 48726	L	T	139.14	8.8	C=215 B=15
123299	ALF DRA	A0 III	2	14 03 02.0	+64 36 51	3.66		-0.05	-0.02	LWP 23582	L	T	5.64	6.8	C=210 B=37
										LWP 23582	S	1	2.75	6.8	C=190 B=34
										SWP 45226	L	T	12.84	7.2	C=215 B=15
										SWP 45226	S	1	6.02	7.2	C=145 B=15
130109	109 VIR	A0 V	2	14 43 43.1	+02 06 09	3.74		-0.01	0.00	LWP 28483	L	T	7.18	7.8	C=205 B=40
										SWP 51227	L	T	19.26	7.2	C=229 B=21
153808	EPS HER	A0 V	10	16 58 22.5	+30 59 55	3.92		-0.02	-0.01	LWP 23116	L	T	6.66	9.8	C=216 B=32
										SWP 44679	L	T	13.91	9.2	C=209 B=14
212061	GAM AQR	A0 V	10	22 19 04.4	-01 38 23	3.85	A	-0.06	-0.05	LWP 28291	L	T	5.95	7.8	C=204 B=35
										SWP 50931	L	T	13.91	8.2	C=225 B=15
										SWP 50933	L	1	3.57	8.5	C=215 B=15

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
12953		A1 Ia	9	02 05 09.9	+58 11 13	5.69		0.61	0.58	LWP 21249	L	T	179.37	8.8	C=227 B=39
										LWP 21249	S	1	600.0	8.8	C=206 B=39
										LWP 21478	L	1	900.0	11.5	C=3X B=80
										SWP 42698	L	3	720.0	11.5	C=140 B=25
										SWP 42698	S	1	300.0	11.5	C=61 B=25
										SWP 43440	L	3	1620.0	11.2	C=211 B=18
										SWP 43440	S	1	900.0	11.2	C=123 B=18
214994	OMI PEG	A1 IV	10	22 39 24.3	+29 02 46	4.80		-0.01	-0.01	LWP 22050	L	T	18.45	11.2	C=205 B=40
										LWP 22050	S	1	9.71	11.2	C=245 B=40
										SWP 43441	L	T	42.80	10.5	C=199 B=18
										SWP 43441	S	1	120.0	10.5	C=5X B=18
198001	EPS AQR	A1 V	2	20 44 58.2	-09 40 48	3.77		0.00	-0.02	LWP 27976	L	T	8.20	7.5	C=200 B=35
										SWP 50616	L	T	19.26	7.2	C=200 B=17
200761	THE CAP	A1 V	10	21 03 08.3	-17 25 57	4.06		-0.01	-0.03	LWP 26496	L	T	8.92	6.1	C=213 B=37
										SWP 48825	L	T	19.26	6.1	C=209 B=17
										SWP 50930	L	T	20.32	7.8	C=213 B=15
33111	BET ERI	A3 III	2	05 05 23.4	-05 08 59	2.78	A	0.13	0.04	LWP 19964	L	T	5.33	13.2	C=221 B=38
										LWP 19964	S	1	2.34	13.2	C=203 B=38
										SWP 41159	L	T	18.19	13.5	C=225 B=18
										SWP 41159	S	1	7.66	13.5	C=134 B=18
50019	THE GEM	A3 III	2	06 49 29.7	+34 01 24	3.60	A	0.10	0.01	LWP 17593	L	T	11.28	11.2	C=218 B=40
										SWP 38432	L	T	37.45	10.8	C=230 B=20
16970	GAM CET	A3 V	10	02 40 42.4	+03 01 34	3.46	AB	0.09	0.01	LWP 27317	L	T	7.18	7.2	C=219 B=35
										SWP 49912	L	T	19.26	6.5	C=205 B=23
38678	ZET LEP	A3 Vn	10	05 44 41.3	-14 50 21	3.54		0.10	0.02	LWP 27413	L	T	8.41	11.5	C=211 B=34
										LWP 27452	L	T	8.41	11.2	C=218 B=36
										SWP 50012	L	T	24.61	12.5	C=210 B=16
										SWP 50070	L	T	24.61	12.5	C=206 B=20
106591	DEL UMA	A3 V	2	12 12 57.6	+57 18 37	3.31	A	0.08	0.00	LWP 25728	L	T	6.30	11.2	C=209 B=33
										LWP 25728	S	1	3.16	11.2	C=144 B=33
										SWP 47855	L	T	18.19	10.2	C=209 B=20
										SWP 47855	S	1	9.71	10.2	C=90 B=20
74272		A5 II	15	08 39 34.6	-47 08 16	4.77		0.12	0.02	LWP 20450	L	T	51.25	10.8	C=210 B=45
										LWP 20450	S	1	135.0	10.8	C=5X B=45
										SWP 41700	L	T	123.05	10.5	C=145 B=18
										SWP 41700	S	1	310.0	10.5	C=245 B=18
										SWP 41796	S	1	600.0	8.8	C=3X B=18
										SWP 42696	L	T	214.00	12.2	C=205 B=18

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
13041	58 AND	A5 IV-V	10	02 05 27.7	+37 37 22	4.81		0.12	-0.03	LWP 20863	L	T	30.75	9.8	C=235 B=65
										LWP 20863	S	1	80.0	9.8	C=5X B=65
										SWP 42114	L	T	139.10	9.8	C=2X B=55
										SWP 42114	S	1	360.0	9.8	C=5X B=55
										SWP 42115	L	T	53.50	9.8	C=145 B=20
97534		A6 Ia	13	11 10 26.8	-60 02 43	4.60	A	0.54	0.44	LWP 13335	L	T	123.0	9.5	C=240 B=38
										SWP 33673	L	1	900.0	9.5	C=5X B=30
										SWP 38210	L	3	720.0	11.2	C=208 B=46
										SWP 38210	S	1	240.0	11.2	C=118 B=51
99211	GAM CRT	A7 IV-V	10	11 22 22.9	-17 24 33	4.07	AB	0.21	-0.01	LWP 24743	L	T	17.42	9.8	C=214 B=29
										SWP 46604	L	T	96.31	9.2	C=1.5X B=21
										SWP 46604	S	1	240.0	9.2	C=5X B=21
										SWP 46742	L	T	74.90	9.5	C=219 B=15
187642	ALF AQL	A7 IV-V	2	19 48 20.6	+08 44 05	0.77	A	0.22	0.00	LWP 26232	L	T	0.92	7.8	C=242 B=35
										SWP 48485	L	T	3.85	7.8	C=227 B=15
										SWP 48485	S	1	9.71	7.8	C=5X B=15
80404	IOT CAR	A8 Ib	13	09 15 45.1	-59 03 53	2.25		0.18	0.04	LWP 15980	L	T	6.15	9.5	C=221 B=42
										LWP 15980	S	1	34.70	9.5	C=10X B=41
										SWP 36720	L	T	23.54	9.2	C=170 B=20
										SWP 36720	S	1	120.0	9.2	C=10X B=18
28910	RHO TAU	A8 V	10	04 31 00.4	+14 44 27	4.65		0.25	-0.02	LWP 27414	L	T	33.82	11.8	C=232 B=47
										LWP 27455	L	1	7.66	11.8	C=222 B=33
										SWP 50013	L	T	192.62	11.8	C=1.5X B=35
										SWP 50073	L	1	39.61	11.8	C=162 B=15
7312		F0 III	13	01 10 27.3	-38 07 15	5.91		0.29	-0.03	LWP 17090	L	3	420.0	10.5	C=4X B=28
										LWP 17090	S	1	120.0	10.5	C=2X B=25
										LWP 17091	L	T	61.50	10.8	C=157 B=37
										SWP 37955	L	3	3600.0	10.5	C=6X B=34
										SWP 37955	S	1	900.0	10.5	C=3X B=36
										SWP 37956	L	3	375.0	10.8	C=203 B=21
										SWP 37956	S	1	120.0	10.8	C=107 B=24
81937	23 UMA	F0 IV-Vb	13	09 27 36.6	+63 16 55	3.66	A	0.33	0.03	LWP 27373	L	3	9.47	8.5	C=228 B=32
										SWP 49965	L	T	123.06	9.5	C=203 B=20
135153	1 LUP	F1 II	13	15 11 33.1	-31 20 01	4.90		0.38	0.13	LWP 16178	L	T	117.88	7.8	C=227 B=36
										SWP 36866	L	3	270.0	8.8	C=102 B=31
										SWP 36866	S	1	900.0	8.8	C=94 B=30
										SWP 36868	L	3	1080.0	7.5	C=1.5X B=34

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
159532	THE SCO	F1 II	13	17 33 43.4	-42 58 05	1.86		0.40	0.15	LWP 26146	L	T	5.13	10.5	C=224 B=42
										LWP 26146	S	1	14.63	10.5	C=5X B=42
										SWP 48384	L	T	53.50	10.8	C=199 B=20
										SWP 48384	S	1	135.0	10.8	C=3X B=20
156897	XI OPH	F1 III-IV	13	17 18 00.3	-21 03 39	4.39	AB	0.38	0.05	LWP 26015	L	T	24.60	10.5	C=210 B=39
										LWP 26015	S	1	60.0	10.5	C=3X B=39
										SWP 48242	L	3	164.30	11.2	C=230 B=22
										SWP 48242	S	1	180.0	11.2	C=170 B=22
182835	NU AQL	F2 Ib	13	19 23 57.6	+00 14 14	4.66	A	0.59	0.41	LWP 26236	L	T	148.66	8.5	C=180 B=35
										SWP 48725	L	3	2340.0	9.2	C=203 B=25
129502	MU VIR	F2 III	13	14 40 25.3	-05 26 36	3.88		0.38	0.02	LWP 19605	L	T	17.42	14.2	C=220 B=35
										LWP 19605	S	1	6.84	14.2	C=80 B=35
										SWP 40923	L	T	321.00	9.2	C=1.5X B=25
										SWP 40923	S	1	780.0	9.2	C=192 B=25
432	BET CAS	†F2 III-IV	1	00 06 29.7	+58 52 26	2.27	A	0.34	-0.03	LWP 20862	L	T	4.87	9.5	C=218 B=40
										LWP 20862	S	1	14.63	9.5	C=5X B=40
										SWP 42113	L	T	48.15	9.8	C=240 B=15
										SWP 42113	S	1	150.0	9.8	C=5X B=15
82434	PSI VEL	F2 IV	13	09 28 43.7	-40 14 49	3.58	AB	0.36	-0.01	LWP 24745	L	T	13.33	9.8	C=221 B=32
										SWP 24745	L	T	139.14	9.5	C=242 B=23
29875	ALF CAE	F2 V	13	04 38 56.9	-41 57 29	4.45	AB	0.34	-0.01	LWP 20865	L	T	27.68	10.5	C=220 B=38
										LWP 20865	S	1	75.0	10.5	C=5X B=38
										SWP 42467	L	T	214.0	8.5	C=225 B=42
										SWP 42467	S	1	540.0	8.5	C=5X B=42
112374		F3 Ia	15	12 53 48.4	-26 11 22	6.62		0.68	0.47	LWP 22438	S	1	300.0	12.2	C=87 B=42
										LWP 22551	L	3	1080.0	8.8	C=173 B=37
										LWP 22551	S	1	600.0	8.8	C=117 B=37
206901	KAP PEG	F3 IV	13	21 42 22.6	+25 24 51	4.14	AB	0.42	0.03	LWP 25892	L	T	26.65	6.8	C=232 B=43
										LWP 25892	S	1	60.0	6.8	C=3X B=43
										SWP 48096	L	3	270.0	6.1	C=244 B=29
										SWP 48096	S	1	240.0	6.1	C=203 B=29
199532	ALF OCT	F4 III	13	20 58 44.0	-77 13 01	5.14		0.49	0.07	LWP 20204	L	T	87.13	9.5	C=239 B=38
										LWP 20204	S	1	39.61	9.5	C=254 B=38
										SWP 41447	L	3	600.0	9.2	C=132 B=18
209166	20 PEG	F4 III	13	21 58 39.1	+12 52 46	5.62	A	0.34	-0.08	LWP 20546	L	T	148.63	9.2	C=2X B=55
										LWP 20546	S	1	270.0	9.2	C=5X B=55
										LWP 20547	L	T	61.50	8.8	C=170 B=40
										LWP 20547	S	1	19.54	8.8	C=150 B=35

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
26462	45 TAU	F4 V	13	04 08 40.4	+05 23 39	5.73	A	0.36	-0.06	LWP 27243	L	3	58.62	9.2	C=240 B=31
										SWP 49838	L	3	480.0	8.5	C=180 B=20
185395	THE CYG	F4 V	13	19 35 06.0	+50 06 16	4.48	AB	0.38	-0.04	LWP 19464	L	T	30.75	13.2	C=210 B=30
										LWP 19464	S	1	14.63	13.2	C=1.5X B=30
										SWP 40443	L	1	19.54	12.2	C=60 B=22
										SWP 40443	S	1	200.0	12.2	C=173 B=22
172052		F5 Ib	13	18 36 00.1	-23 13 38	6.73		0.66	0.40	LWP 29194	L	3	315.0	7.5	C=150 B=33
										LWP 29233	L	3	630.0	5.8	C=251 B=35
43905	45 AUR	F5 III	13	06 17 42.5	+53 28 38	5.35		0.43	0.00	LWP 27372	L	T	92.26	8.5	C=218 B=34
										SWP 49966	L	3	630.0	8.2	C=118 B=23
										SWP 49967	L	2	960.0	7.8	C=197 B=23
79940		F5 III	13	09 13 44.9	-37 12 14	4.62	AB	0.45	0.02	LWP 20451	L	T	54.32	11.2	C=1.5X B=60
										LWP 20451	S	1	125.0	11.2	C=5X B=60
										LWP 20453	L	T	41.00	10.5	C=185 B=32
										LWP 24744	L	T	53.30	9.8	C=220 B=30
139664		F5 IV-V	13	15 37 44.5	-44 29 50	4.63		0.40	-0.02	LWP 27868	L	1	9.71	9.5	C=1.5X B=37
										LWP 27974	L	3	20.53	6.8	C=247 B=35
										LWP 27974	S	1	60.0	6.8	C=3X B=35
										SWP 50615	L	3	360.0	8.2	C=239 B=20
160922	OMG DRA	F5 V	13	17 37 14.3	+68 46 52	4.79	A	0.43	-0.02	LWP 25724	L	T	46.13	9.5	C=237 B=37
										LWP 25724	S	1	120.0	9.5	C=5X B=37
										SWP 47854	L	3	450.0	10.5	C=224 B=19
										SWP 47854	S	1	300.0	10.5	C=157 B=19
30652	PI 3 ORI	†F6 V	1	04 47 07.4	+06 52 32	3.19	A	0.45	-0.03	LWP 27309	L	T	11.28	7.5	C=240 B=35
										SWP 49839	L	1	130.0	8.5	C=1.5X B=15
										SWP 49908	L	3	255.0	7.8	C=1.5X B=22
										SWP 49914	L	3	180.0	7.5	C=228 B=22
57623	DEL VOL	F6 V	13	07 16 51.7	-67 51 56	3.96		0.77	0.29	LWP 16496	L	T	82.00	8.2	C=220 B=37
171635	45 DRA	F7 Ib	13	18 31 42.7	+57 00 24	4.79		0.61	0.16	LWP 17040	L	T	133.25	12.2	C=212 B=36
										LWP 17040	S	1	300.0	12.2	C=244 B=32
8890	ALF UMI	F7 Ib-II	13	01 48 48.8	+89 01 43	2.02	A	0.60	0.12	LWP 27111	L	T	10.25	9.2	C=228 B=35
										LWP 27111	S	1	29.78	9.2	C=233 B=32
151769	20 OPH	F7 IV	13	16 47 03.9	-10 41 46	4.65		0.47	-0.03	LWP 19821	L	T	44.07	9.2	C=217 B=38
										LWP 19821	S	1	120.0	9.2	C=2X B=38
124850	IOT VIR	F7 V	13	14 13 23.3	-05 45 46	4.08		0.51	0.01	LWP 28390	L	3	18.07	6.8	C=237 B=35
										SWP 51069	L	3	720.0	6.5	C=236 B=60
133683		F8 Iab-Ib	13	15 05 01.5	-66 53 36	5.76		0.68	0.13	LWP 22439	L	3	360.0	12.2	C=1.5X B=40
										LWP 22439	S	1	180.0	12.2	C=241 B=40

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
172365		F8 Ib-II	13	18 37 09.2	+05 13 03	6.38		0.79	0.22	LWP 28435	L	3	360.0	10.2	C=208 B=42
101947		G0 0-Ia Fe 1	11	11 41 07.3	-62 12 42	5.03		0.79	-0.03	LWP 28437	L	3	70.91	10.2	C=1.5X B=39
204867	BET AQR	†G0 Ib	1	21 28 55.7	-05 47 31	2.90	A	0.83	0.01	LWP 26461	L	T	30.75	9.8	C=210 B=32
										LWP 26461	S	1	80.0	9.8	C=5X B=32
188650		G1 Ib-II	12	19 52 58.6	+36 51 46	5.76		0.75	-0.08	LWP 26013	L	3	154.47	8.5	C=210 B=43
										LWP 26013	S	1	360.0	8.5	C=3X B=43
185758	ALF SGE	G1 II	1	19 37 51.6	+17 53 51	4.38	A	0.78	-0.02	LWP 27975	L	3	58.52	7.2	C=1.5X B=35
100261	OMI 1 CEN	G2 Ia	1	11 29 26.8	-59 09 57	5.13	A	1.07	0.19	LWP 28438	L	3	360.0	10.2	C=221 B=38
144608	OMG 2 SCO	G3 II-III	11	16 04 28.1	-20 44 06	4.32		0.84	-0.02	LWP 19818	L	T	123.00	8.5	C=234 B=34
										LWP 19818	S	1	60.0	8.5	C=249 B=34
204075	ZET CAP	G4 Ib	15	21 23 48.9	-22 37 44	3.74	A	1.00	0.04	LWP 28388	L	T	72.75	6.5	C=210 B=35
82210	24 UMA	G4 III-IV	1	09 30 05.8	+70 03 06	4.57		0.77	-0.03	LWP 17590	L	T	97.37	10.5	E=234 C=170 B=39
187299		G5 Iab-Ib	13	19 46 15.6	+24 53 02	7.15		1.61	0.61	LWP 28289	L	3	2700.0	7.5	C=219 B=73
36079	BET LEP	G5 II	11	05 26 06.1	-20 47 52	2.84	AB	0.82	-0.05	LWP 22599	L	T	25.63	9.8	C=214 B=34
										LWP 22599	S	1	24.87	9.8	C=1.5X B=30
153751	EPS UMI	G5 III	13	16 51 00.9	+82 07 21	4.23		0.90	0.00	LWP 23580	L	T	97.37	6.1	C=210 B=52
										LWP 23580	S	1	240.0	6.1	C=5X B=52
148856	BET HER	G7 IIIa	11	16 28 04.1	+21 35 50	2.78	A	0.93	-0.01	LWP 27977	L	3	24.22	7.5	C=1.5X B=34
										LWP 27977	S	1	85.0	7.5	C=5X B=34
202109	ZET CYG	G8 II CN 1	1	21 10 48.4	+30 01 15	3.21	A	0.99	0.00	LWP 25893	L	T	73.79	6.8	C=250 B=39
										LWP 25893	S	1	120.0	6.8	C=3X B=39
										LWP 25895	L	1	14.63	7.2	C=228 B=32
96566		G8 III	15	11 04 28.9	-62 09 12	4.61		1.03	0.08	LWP 28482	L	3	225.0	7.5	C=1.5X B=46
115659	GAM HYA	G8- IIIa	11	13 16 11.9	-22 54 29	2.99	A	0.92	-0.03	LWP 28389	L	T	51.25	6.8	C=239 B=46
133208	BET BOO	G8- IIIa: Ba 0.4	11	15 00 03.7	+40 35 12	3.51		0.96	0.01	LWP 27870	L	T	92.26	8.8	C=246 B=35
192947	ALF 2 CAP	G8 IIIb	12	20 15 16.9	-12 42 04	3.57	ABC	0.94	-0.01	LWP 26460	L	T	87.12	10.2	C=216 B=33
										LWP 26460	S	1	240.0	10.2	C=5X B=33
76294	ZET HYA	†G9 II-III	1	08 52 45.1	+06 08 13	3.10		1.00	0.00	LWP 17824	L	T	73.80	9.8	C=238 B=37
96436	65 LEO	G9 III	14	11 04 21.2	+02 13 38	5.52	AB	0.97	-0.01	LWP 27237	L	3	285.0	8.5	C=1.5X B=35
207089	12 PEG	K0 Ib	1	21 43 46.2	+22 43 03	5.29		1.38	0.20	LWP 20545	L	3	756.0	8.8	E=1.5X C=200 B=45
										LWP 20545	S	1	300.0	8.8	E=213 C=130 B=45
39364	DEL LEP	K0 III CN-2	11	05 49 10.2	-20 52 55	3.78		1.00	-0.01	LWP 22600	L	T	143.50	10.2	C=214 B=36
										LWP 22600	S	1	360.0	10.2	C=5X B=32
88284	LAM HYA	K0 III CN 1	11	10 08 08.9	-12 06 22	3.61	A	1.01	0.00	LWP 27869	L	3	118.83	9.2	C=1.5X B=51
										LWP 27872	L	3	89.34	8.8	C=221 B=35
197989	EPS CYG	†K0- III	1	20 44 11.2	+33 46 55	2.47	A	1.03	0.02	LWP 23111	L	T	46.13	9.8	C=224 B=49
										LWP 23111	S	1	120.0	9.8	C=5X B=49
219615	GAM PSC	K0- III: CN-1.5	11	23 14 34.3	+03 00 31	3.70		0.92	-0.09	LWP 17036	L	T	98.40	11.2	C=234 B=36

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
163770	THE HER	†K1 IIa CN+2	1	17 54 32.2	+37 15 21	3.86		1.35	0.21	LWP 22655	L	3	210.0	9.8	E=181 C=160 B=35
										LWP 22655	S	1	60.0	9.8	E=66 C=54 B=35
										LWP 22658	L	3	360.0	10.8	E=249 C=228 B=34
										LWP 22658	S	1	300.0	10.8	E=126 C=107 B=34
160635	ETA PAV	K1 III	13	17 40 49.2	-64 42 09	3.61		1.19	0.10	LWP 26149	L	T	205.0	10.5	C=173 B=36
										LWP 26149	S	1	540.0	10.5	C=5X B=36
210745	ZET CEP	†K1.5 Ib	1	22 09 06.9	+57 57 15	3.35		1.57	0.36	LWP 17038	L	T	174.25	12.2	E=160 C=89 B=36
										LWP 17038	S	1	600.0	12.2	E=2X C=238 B=33
										LWP 17039	L	3	900.0	12.2	E=3X C=2X B=37
157999	SIG OPH	†K2 II	1	17 24 01.9	+04 10 56	4.33		1.50	0.21	LWP 23115	L	3	420.0	9.8	E=134 C=129 B=30
										LWP 23115	S	1	90.0	9.8	E=52 C=60 B=30
										LWP 26017	L	3	720.0	11.8	E=235 C=180 B=36
20644		K2 II-III	13	03 17 18.5	+28 52 07	4.47		1.55	0.42	LWP 27238	L	3	810.0	7.8	C=120 B=42
										LWP 27242	L	3	1800.0	9.5	E=247 C=190 B=37
150798	ALF TRA	K2 IIb-IIIa	13	16 43 21.1	-68 56 19	1.91		1.45	0.32	LWP 26148	L	T	66.62	10.5	E=166 C=122 B=34
										LWP 26148	S	1	180.0	10.5	E=3X C=2X B=34
										LWP 26233	L	T	112.76	7.8	E=218 C=164 B=37
										LWP 26233	S	1	60.0	7.8	E=112 C=83 B=37
161096	BET OPH	†K2 III	1	17 41 00.0	+04 35 11	2.77		1.17	0.01	LWP 22663	L	T	92.25	9.8	C=138 B=32
										LWP 22663	S	1	24.87	9.8	C=84 B=32
										LWP 22667	L	T	156.85	10.2	C=205 B=34
163588	XI DRA	†K2 III	1	17 52 39.7	+56 52 47	3.75	A	1.18	0.02	LWP 22665	L	3	195.0	9.8	C=182 B=34
										LWP 22665	S	1	120.0	9.8	C=57 B=34
10486		K2 IV	13	01 40 13.2	+45 04 15	6.33		1.02	-0.02	LWP 20864	L	3	900.0	10.2	C=220 B=35
										LWP 20864	S	1	300.0	10.2	C=50 B=35
31398	IOT AUR	†K3 II	1	04 53 44.0	+33 05 19	2.68		1.53	0.13	LWP 27245	L	3	360.0	9.2	E=2X C=230 B=58
										LWP 27245	S	1	60.0	9.2	C=77 B=58
										LWP 27311	L	3	180.0	8.2	E=223 C=146 B=33
127700	5 UMI	K4- III Ba 0.3	12	14 27 36.2	+75 55 05	4.27	A	1.43	0.00	LWP 25727	L	3	1980.0	11.2	E=2X C=1.5X B=40
										LWP 25727	S	1	600.0	11.2	E=94 C=76 B=40
										LWP 27113	L	1	640.0	8.8	E=253 C=222 B=34
										LWP 27114	L	3	1260.0	8.8	E=241 C=195 B=37
131873	BET UMI	†K4 III	1	14 50 49.6	+74 21 35	2.07	AB	1.47	0.04	LWP 16833	L	T	164.00	8.2	E=210 C=117 B=33
										LWP 16834	L	T	369.00	7.5	E=2X C=195 B=36
209747	NU PEG	K4 III	13	22 03 09.4	+04 48 48	4.85		1.45	0.02	LWP 26462	L	3	3600.0	9.8	E=1.5X C=254 B=42
										LWP 26494	L	1	900.0	5.8	E=229 C=146 B=35

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
44537	PSI 1 AUR	†K5-M0 Iab-Ib	1	06 21 02.9	+49 18 56	4.87		1.96	0.36	LWP 16832	L	3	2160.0	8.8	E=3X C=148 B=66
										LWP 16832	S	1	360.0	8.8	E=94 B=66
										LWP 17591	L	1	480.0	10.8	E=1.5X C=115 B=3
										LWP 17595	L	1	360.0	11.5	E=220 C=85 B=35
139669	THE UMI	K5 III	13	15 32 51.3	+77 30 59	4.96		1.58	0.07	LWP 27112	L	3	1260.0	8.5	E=159 C=106 B=36
										LWP 27115	L	3	2340.0	8.8	E=237 C=161 B=39
164058	GAM DRA	†K5 III	1	17 55 26.6	+51 29 38	2.23		1.52	0.01	LWP 22656	L	3	360.0	10.2	E=2X C=235 B=34
										LWP 22656	S	1	60.0	10.2	E=98 C=61 B=34
										LWP 25891	L	1	60.0	6.8	E=222 C=130 B=37
										LWP 25891	S	1	180.0	6.8	E=202 C=110 B=37
52877	SIG CMA	†K7 Ib	1	06 59 43.6	-27 51 43	3.46	A	1.73	0.11	LWP 12977	L	1	120.0	9.5	E=255 C=127 B=36
										LWP 16498	L	3	720.0	8.5	E=2X C=150 B=35
										LWP 16498	S	1	120.0	8.5	E=100 C=46 B=35
80493	ALF LYN	†K7 IIIab	1	09 18 00.9	+34 36 18	3.14		1.55	0.02	LWP 23113	L	3	180.0	10.2	E=1.5X C=142 B=78
										LWP 23113	S	1	29.78	10.2	E=122
										LWP 23112	L	3	360.0	9.8	E=5X C=187 B=83
149161	29 HER	†K7 III	1	16 30 15.8	+11 35 38	4.83		1.49	-0.04	LWP 22657	L	3	3600.0	10.8	E=3X C=217 B=45
										LWP 22657	S	1	1200.0	10.8	E=193 C=94 B=45
9053	GAM PHE	M0- IIIa	11	01 26 11.8	-43 34 25	3.41		1.57	0.00	LWP 15614	L	3	525.0	10.8	E=3X C=180 B=37
										LWP 15614	S	1	130.0	10.8	E=1.5X C=83 B=37
										LWP 17089	L	3	774.0	10.5	E=12X C=180 B=37
										LWP 17089	S	1	100.0	10.5	E=194 C=72 B=34
100029	LAM DRA	M0 III Ca-1	12	11 28 27.5	+69 36 26	3.85		1.61	0.04	LWP 27315	L	2	1200.0	6.5	E=3X C=216 B=36
										LWP 27316	L	3	540.0	7.2	E=1.5X C=105 B=32
										LWP 27316	S	1	300.0	7.2	E=114 C=49 B=32
111631		M0.5 V	2	12 48 09.7	-00 29 37	8.49		1.41	-0.06	LWP 28391	L	1	1500.0	7.2	E=217 C=107 B=71
49331		M1+ Ib-IIa	11	06 45 13.8	-08 56 32	5.05		1.80	0.15	LWP 17823	L	3	3600.0	9.8	E=2X C=254 B=99
112769	36 COM	†M1- IIIb	1	12 56 27.1	+17 40 42	4.77		1.57	-0.03	LWP 27416	L	3	1080.0	12.2	E=1.5X C=102 B=35
										LWP 27418	L	1	1500.0	12.2	E=2X C=219 B=35
141477	KAP SER	†M1- IIIab	1	15 46 29.2	+18 17 41	4.10		1.61	0.01	LWP 22791	L	3	1800.0	8.2	E=3X C=188 B=64
										LWP 22791	S	1	480.0	8.2	E=152 C=86 B=60
168720	106 HER	†M1 IIIb	1	18 18 10.9	+21 56 19	4.94		1.59	-0.01	LWP 22789	L	3	864.0	9.2	E=172 C=80 B=40
										LWP 22789	S	1	300.0	9.2	E=102 C=61 B=38
										LWP 22792	L	3	3060.0	8.9	E=2X C=141 B=40
206936	MU CEP	†M2 Ia	1	21 41 58.5	+58 33 00	4.10	A	2.33	0.68	LWP 13554	L	1	3600.0	11.5	E=1.5x C=215 B=104
										LWP 17037	L	3	8100.0	12.2	E=247 C=245 B=56
36389	119 TAU	†M2 Iab-Ib	1	05 29 16.8	+18 33 31	4.35		2.07	0.42	LWP 27244	L	3	1080.0		E=186 C=100 B=53
										LWP 27311	L	3	2160.0		E=2X C=145 B=71

Table I - Atlas Stars and Images (continued)

HD	Name	Spectral Type	Ref	RA	DEC	V	AB	B-V	E(B-V)	Image	Ap	N	Expo	Thda	DN
1013	CHI PEG	†M2+ III	1	00 12 00.7	+19 55 43	4.80		1.57	-0.03	LWP 15978	L	3	4500.0	9.8	E=3X C=240 B=75
										LWP 15978	S	1	900.0	9.8	E=203 C=121 B=71
86663	PI LEO	M2- IIIab	11	09 57 34.3	+08 17 05	4.69		1.60	0.00	LWP 15567	L	3	5400.0	10.8	E=4X C=2X B=50
										LWP 15567	S	1	720.0	10.8	E=126 C=74 B=51
										LWP 15615	L	3	3300.0	10.8	E=2X C=205 B=43
										LWP 17825	L	3	3600.0	10.2	E=3X C=266 B=41
119228	83 UMA	†M2 IIIab	1	13 38 50.6	+54 56 03	4.66		1.63	0.03	LWP 22790	L	3	900.0	8.5	E=246 C=142 B=79
										LWP 22790	S	1	420.0	8.5	E=192 C=109 B=77
										LWP 27374	L	3	1800.0	8.5	E=1.5X C=134 B=44
216399		dM2	16	22 49 52.3	+22 37 02	8.65		~1.3	-0.00	LWP 19463	L	1	14400.0	13.5	E=1.5X C=188 B=100
										LWP 19462	L	1	3600.0	12.5	E=106 C=72 B=40
40239	PI AUR	†M3 II	1	05 56 13.4	+45 56 04	4.29		1.70	0.10	LWP 16831	S	1	540.0	9.2	E=211 C=61 B=39
										LWP 16831	L	3	2700.0	9.2	E=4X C=205 B=41
112300	DEL VIR	†M3 III	1	12 53 05.0	+03 40 07	3.38	A	1.57	-0.03	LWP 27417	L	3	720.0	12.2	E=2X C=144 B=34
										LWP 27417	S	1	120.0	12.2	E=82 C=47 B=32
133216	SIG LIB	M3- III	12	15 01 08.2	-25 05 12	3.30		1.68	0.08	LWP 19603	L	3	195.0	13.5	E=229 C=80 B=35
										LWP 19603	S	1	100.0	13.5	E=70 B=35
										LWP 19819	L	1	540.0	8.8	E=6X C=240 B=34
173739		M3 V	14	18 42 12.9	+59 32 58	8.90	A	1.54	0.07	LWP 22051	L	1	7920.0	11.5	E=148 C=80 B=50
										LWP 22198	L	1	10800.0	9.5	E=213 C=100 B=65
108903	GAM CRU	M3.5 III	11	12 28 22.7	-56 50 00	1.62	A	1.60	-0.02	LWP 22596	L	3	300.0	10.5	E=2X C=1.5X B=35
										LWP 22596	S	1	150.0	10.5	E=1.5X C=118 B=32
										LWP 28436	L	3	270.0	10.2	E=6X C=228 B=61
										LWP 28436	S	1	29.78	10.2	E=235 C=93 B=61
175588	DEL 2 LYR	†M4 II	1	18 52 45.2	+36 50 02	4.28	A	1.67	0.04	LWP 22664	L	3	1440.0	9.8	E=4X C=219 B=47
										LWP 22664	S	1	180.0	9.8	E=230 C=90 B=47
123657		M4.5 III	12	14 05 55.8	+44 05 29	5.26		1.58	-0.06	LWP 27375	L	3	1170.0	8.5	E=1.5X C=92 B=37
										LWP 27415	L	1	720.0	11.8	E=2X C=201 B=135
										LWP 27415	S	1	360.0	11.8	E=235 C=171 B=135
145713	10 HER	M4.5 IIIa	15	16 09 30.2	+23 37 22	5.58		1.57	-0.07	LWP 28439	L	2	4200.0	10.2	E=4X C=141 B=46
										LWP 28439	S	1	360.0	10.2	E=130 C=71 B=43
148783	30 HER	†M6- III	1	16 26 59.8	+41 59 26	5.00		1.54	0.05	LWP 19820	L	3	2880.0	9.5	E=2X C=177 B=46
										LWP 19820	S	1	180.0	9.5	E=74 B=46
										LWP 19822	L	1	600.0	9.5	E=1.5X C=80 B=34
										LWP 19822	S	1	840.0	9.5	E=151 C=47 B=34
207076		M7 III:	1	21 43 56.5	-02 26 40	6.69		1.49	-0.01	LWP 28484	L	1	11700.0	8.8	E=191 C=121 B=80

Table I - Atlas Stars and Images (continued)

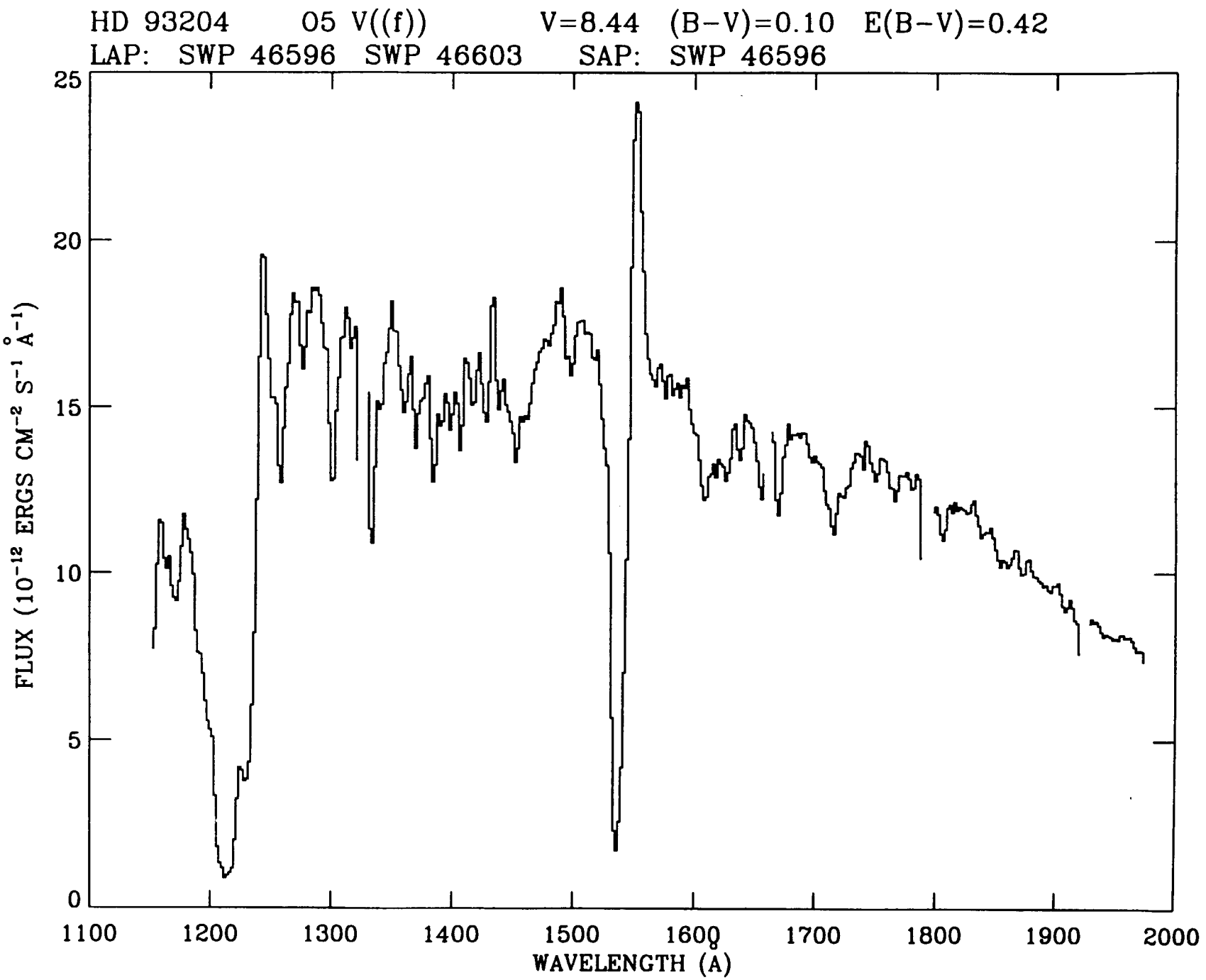
References for spectral type

(1) Morgan and Keenan 1973.
(2) Johnson and Morgan 1953.
(3) Walborn 1982.
(4) Walborn 1973.
(5) Walborn 1972.
(6) Lesh 1968.
(7) Lesh 1972.
(8) Garrison, Hiltner and Schild 1977.
(9) Morgan, Code and Whitford 1955.
(10) Cowley, Cowley, Jaschek and Jaschek 1969.
(11) Keenan and Pitts 1980.
(12) Keenan and Pitts 1981.
(13) Jaschek 1980.
(14) Buscombe 1984.
(15) Hoffleit 1982.
(16) O'Connell 1973.

HD 93204 O5 V((f)) V=8.44 (B-V)=0.10 E(B-V)=0.42

LAP: SWP 46596 SWP 46603 SAP: SWP 46596

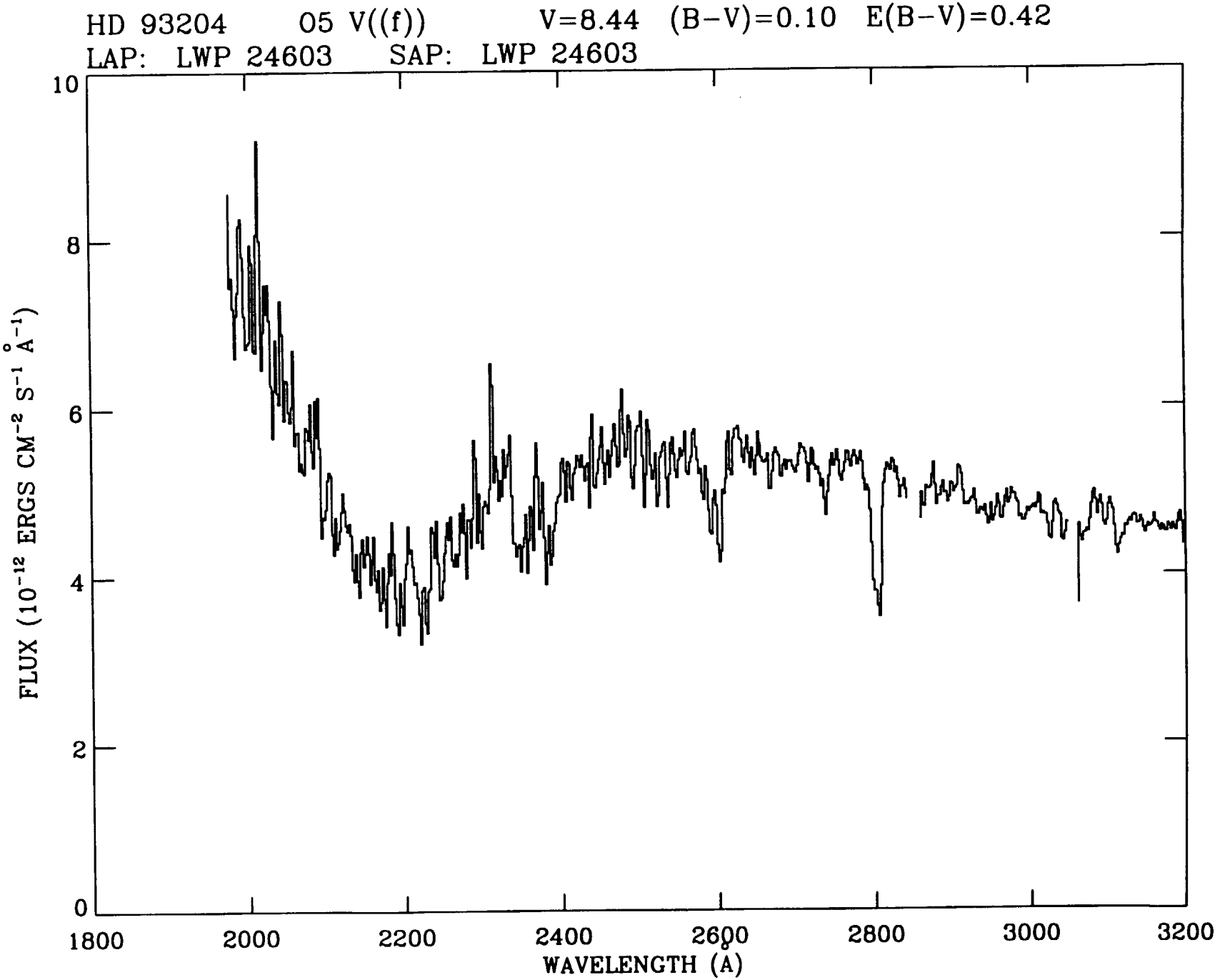
Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux
1152	7.73e-12	1220	2.03e-12	1288	1.86e-11	1356	1.62e-11	1424	1.57e-11	1492	1.77e-11	1560	1.72e-11	1628	1.30e-11	1696	1.35e-11	1764	1.26e-11	1832	1.22e-11	1900	9.62e-12
1154	8.31e-12	1222	3.26e-12	1290	1.84e-11	1358	1.55e-11	1426	1.48e-11	1494	1.65e-11	1562	1.65e-11	1630	1.35e-11	1698	1.34e-11	1766	1.22e-11	1834	1.18e-11	1902	9.71e-12
1156	1.03e-11	1224	4.20e-12	1292	1.75e-11	1360	1.48e-11	1428	1.46e-11	1496	1.65e-11	1564	1.60e-11	1632	1.44e-11	1700	1.35e-11	1768	1.25e-11	1836	1.14e-11	1904	9.40e-12
1158	1.16e-11	1226	4.11e-12	1294	1.68e-11	1362	1.52e-11	1430	1.58e-11	1498	1.60e-11	1566	1.58e-11	1634	1.45e-11	1702	1.34e-11	1770	1.30e-11	1838	1.11e-11	1906	9.02e-12
1160	1.15e-11	1228	3.78e-12	1296	1.67e-11	1364	1.60e-11	1432	1.80e-11	1500	1.63e-11	1568	1.56e-11	1636	1.37e-11	1704	1.33e-11	1772	1.29e-11	1840	1.12e-11	1908	8.86e-12
1162	1.04e-11	1230	3.84e-12	1298	1.45e-11	1366	1.65e-11	1434	1.83e-11	1502	1.72e-11	1570	1.62e-11	1638	1.34e-11	1706	1.32e-11	1774	1.29e-11	1842	1.12e-11	1910	8.99e-12
1164	1.01e-11	1232	4.34e-12	1300	1.28e-11	1368	1.49e-11	1436	1.58e-11	1504	1.76e-11	1572	1.63e-11	1640	1.38e-11	1708	1.25e-11	1776	1.30e-11	1844	1.12e-11	1912	9.22e-12
1166	1.05e-11	1234	6.05e-12	1302	1.28e-11	1370	1.38e-11	1438	1.49e-11	1506	1.76e-11	1574	1.58e-11	1642	1.48e-11	1710	1.21e-11	1778	1.29e-11	1846	1.14e-11	1914	8.98e-12
1168	9.60e-12	1236	8.21e-12	1304	1.49e-11	1372	1.48e-11	1440	1.55e-11	1508	1.76e-11	1576	1.53e-11	1644	1.46e-11	1712	1.20e-11	1780	1.25e-11	1848	1.11e-11	1916	8.60e-12
1170	9.25e-12	1238	1.22e-11	1306	1.59e-11	1374	1.52e-11	1442	1.58e-11	1510	1.72e-11	1578	1.60e-11	1646	1.45e-11	1714	1.14e-11	1782	1.26e-11	1850	1.07e-11	1918	8.51e-12
1172	9.15e-12	1240	1.65e-11	1308	1.71e-11	1376	1.53e-11	1444	1.51e-11	1512	1.73e-11	1580	1.60e-11	1648	1.44e-11	1716	1.12e-11	1784	1.30e-11	1852	1.04e-11	1920	7.62e-12
1174	9.74e-12	1242	1.96e-11	1310	1.71e-11	1378	1.57e-11	1446	1.49e-11	1514	1.72e-11	1582	1.54e-11	1650	1.40e-11	1718	1.18e-11	1786	1.29e-11	1854	1.02e-11	1922	———
1176	1.08e-11	1244	1.95e-11	1312	1.80e-11	1380	1.59e-11	1448	1.46e-11	1516	1.65e-11	1584	1.56e-11	1652	1.34e-11	1720	1.24e-11	1788	1.05e-11	1856	1.04e-11	1924	———
1178	1.18e-11	1246	1.78e-11	1314	1.77e-11	1382	1.40e-11	1450	1.42e-11	1518	1.64e-11	1586	1.57e-11	1654	1.26e-11	1722	1.23e-11	1790	———	1858	1.03e-11	1926	———
1180	1.13e-11	1248	1.65e-11	1316	1.68e-11	1384	1.27e-11	1452	1.34e-11	1520	1.67e-11	1588	1.53e-11	1656	1.22e-11	1724	1.23e-11	1792	———	1860	1.02e-11	1928	8.51e-12
1182	1.10e-11	1250	1.53e-11	1318	1.71e-11	1386	1.33e-11	1454	1.38e-11	1522	1.57e-11	1590	1.57e-11	1658	1.30e-11	1726	1.26e-11	1794	———	1862	1.03e-11	1930	8.63e-12
1184	1.06e-11	1252	1.53e-11	1320	1.74e-11	1388	1.48e-11	1456	1.47e-11	1524	1.47e-11	1592	1.56e-11	1660	———	1728	1.27e-11	1796	———	1864	1.05e-11	1932	8.53e-12
1186	9.95e-12	1254	1.51e-11	1322	1.34e-11	1390	1.44e-11	1458	1.46e-11	1526	1.38e-11	1594	1.59e-11	1662	———	1730	1.32e-11	1798	1.19e-11	1866	1.07e-11	1934	8.56e-12
1188	8.26e-12	1256	1.32e-11	1324	———	1392	1.46e-11	1460	1.47e-11	1528	1.33e-11	1596	1.49e-11	1664	1.43e-11	1732	1.34e-11	1800	1.20e-11	1868	1.07e-11	1936	8.44e-12
1190	7.62e-12	1258	1.27e-11	1326	———	1394	1.54e-11	1462	1.46e-11	1530	1.06e-11	1598	1.45e-11	1666	1.40e-11	1734	1.36e-11	1802	1.18e-11	1870	1.02e-11	1938	8.25e-12
1192	7.57e-12	1260	1.44e-11	1328	———	1396	1.51e-11	1464	1.51e-11	1532	5.68e-12	1600	1.42e-11	1668	1.22e-11	1736	1.36e-11	1804	1.12e-11	1872	9.96e-12	1940	8.11e-12
1194	6.99e-12	1262	1.56e-11	1330	1.54e-11	1398	1.43e-11	1466	1.57e-11	1534	2.32e-12	1602	1.42e-11	1670	1.17e-11	1738	1.35e-11	1806	1.10e-11	1874	9.99e-12	1942	8.18e-12
1196	6.17e-12	1264	1.63e-11	1332	1.13e-11	1400	1.48e-11	1468	1.61e-11	1536	1.73e-12	1604	1.34e-11	1672	1.24e-11	1740	1.31e-11	1808	1.13e-11	1876	1.04e-11	1944	8.14e-12
1198	5.58e-12	1266	1.78e-11	1334	1.09e-11	1402	1.54e-11	1470	1.64e-11	1538	2.60e-12	1606	1.26e-11	1674	1.35e-11	1742	1.40e-11	1810	1.20e-11	1878	1.04e-11	1946	8.10e-12
1200	5.32e-12	1268	1.84e-11	1336	1.32e-11	1404	1.51e-11	1472	1.67e-11	1540	4.20e-12	1608	1.22e-11	1676	1.39e-11	1744	1.39e-11	1812	1.21e-11	1880	1.01e-11	1948	8.02e-12
1202	5.10e-12	1270	1.81e-11	1338	1.52e-11	1406	1.37e-11	1474	1.68e-11	1542	7.03e-12	1610	1.23e-11	1678	1.45e-11	1746	1.33e-11	1814	1.18e-11	1882	9.92e-12	1950	8.06e-12
1204	3.35e-12	1272	1.82e-11	1340	1.49e-11	1408	1.44e-11	1476	1.70e-11	1544	1.04e-11	1612	1.29e-11	1680	1.40e-11	1748	1.31e-11	1816	1.21e-11	1884	9.89e-12	1952	8.01e-12
1206	1.82e-12	1274	1.68e-11	1342	1.51e-11	1410	1.65e-11	1478	1.70e-11	1546	1.41e-11	1614	1.30e-11	1682	1.42e-11	1750	1.28e-11	1818	1.19e-11	1886	9.79e-12	1954	8.15e-12
1208	1.34e-12	1276	1.62e-11	1344	1.63e-11	1412	1.63e-11	1480	1.69e-11	1548	1.92e-11	1616	1.33e-11	1684	1.42e-11	1752	1.30e-11	1820	1.20e-11	1888	9.73e-12	1956	8.15e-12
1210	1.19e-12	1278	1.68e-11	1346	1.66e-11	1414	1.59e-11	1482	1.72e-11	1550	2.30e-11	1618	1.29e-11	1686	1.42e-11	1754	1.35e-11	1822	1.19e-11	1890	9.61e-12	1958	8.06e-12
1212	8.99e-13	1280	1.79e-11	1348	1.73e-11	1416	1.51e-11	1484	1.75e-11	1552	2.41e-11	1620	1.34e-11	1688	1.41e-11	1756	1.35e-11	1824	1.19e-11	1892	9.64e-12	1960	8.08e-12
1214	9.77e-13	1282	1.78e-11	1350	1.82e-11	1418	1.52e-11	1486	1.82e-11	1554	2.38e-11	1622	1.33e-11	1690	1.42e-11	1758	1.34e-11	1826	1.18e-11	1894	9.50e-12	1962	8.10e-12
1216	1.06e-12	1284	1.86e-11	1352	1.73e-11	1420	1.61e-11	1488	1.81e-11	1556	2.09e-11	1624	1.32e-11	1692	1.42e-11	1760	1.31e-11	1828	1.18e-11	1896	9.45e-12	1964	7.99e-12
1218	1.18e-12	1286	1.85e-11	1354	1.73e-11	1422	1.66e-11	1490	1.86e-11	1558	1.91e-11	1626	1.28e-11	1694	1.39e-11	1762	1.26e-11	1830	1.21e-11	1898	9.63e-12	1966	7.81e-12


HD 93204 05 V((f)) V=8.44 (B-V)=0.10 E(B-V)=0.42
LAP: SWP 46596 SWP 46603 SAP: SWP 46596
FLUX (10^{-12} ERGS CM^{-2} S^{-1} $\AA^{-1}$)
WAVELENGTH (A)
0
5
10
15
20
25
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000

HD 93204 O5 V((f)) V=8.44 (B-V)=0.10 E(B-V)=0.42

LAP: LWP 24603 SAP: LWP 24603

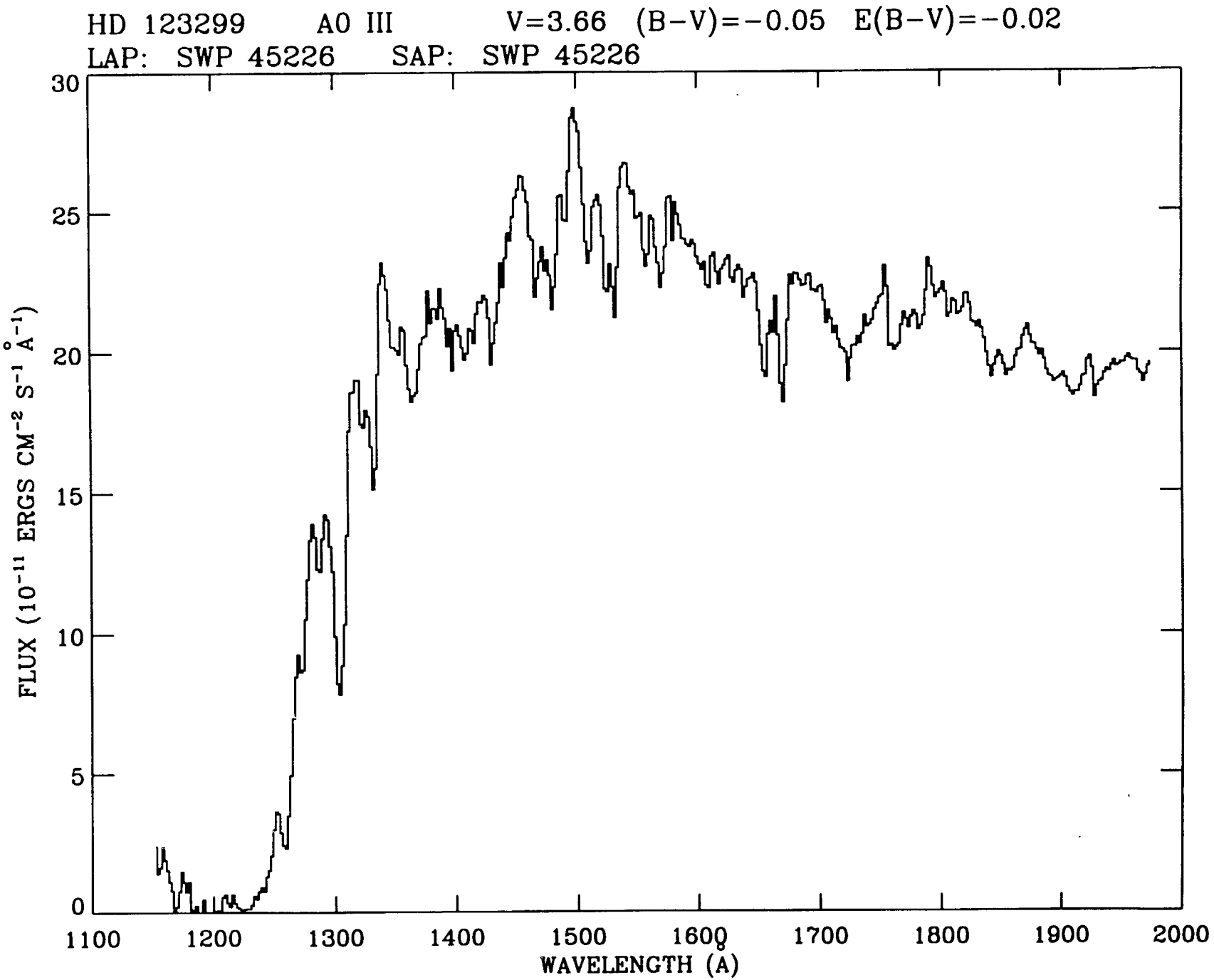
Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux
1976	8.56e-12	2078	5.64e-12	2180	4.29e-12	2282	4.68e-12	2384	4.60e-12	2486	5.91e-12	2588	4.78e-12	2690	5.35e-12	2792	5.02e-12	2894	4.86e-12	2996	4.77e-12	3098	4.62e-12
1978	7.44e-12	2080	6.07e-12	2182	4.03e-12	2284	4.35e-12	2386	4.13e-12	2488	5.84e-12	2590	4.52e-12	2692	5.34e-12	2794	4.77e-12	2896	4.92e-12	2998	4.74e-12	3100	4.81e-12
1980	7.56e-12	2082	5.50e-12	2184	4.66e-12	2286	4.70e-12	2388	4.24e-12	2490	5.16e-12	2592	4.49e-12	2694	5.36e-12	2796	4.37e-12	2898	5.09e-12	3000	4.77e-12	3102	4.89e-12
1982	7.19e-12	2084	5.31e-12	2186	4.28e-12	2288	5.63e-12	2390	4.54e-12	2492	5.04e-12	2594	4.91e-12	2696	5.29e-12	2798	3.93e-12	2900	5.07e-12	3002	4.79e-12	3104	4.81e-12
1984	6.61e-12	2086	6.10e-12	2188	3.76e-12	2290	5.41e-12	2392	4.63e-12	2494	5.31e-12	2596	5.01e-12	2698	5.25e-12	2800	3.81e-12	2902	4.98e-12	3004	4.81e-12	3106	4.76e-12
1986	7.11e-12	2088	5.67e-12	2190	3.44e-12	2292	4.40e-12	2394	4.88e-12	2496	5.72e-12	2598	4.83e-12	2700	5.22e-12	2802	3.81e-12	2904	5.02e-12	3006	4.78e-12	3108	4.56e-12
1988	7.39e-12	2090	6.14e-12	2192	3.32e-12	2294	4.98e-12	2396	4.95e-12	2498	5.78e-12	2600	4.37e-12	2702	5.30e-12	2804	3.63e-12	2906	5.05e-12	3008	4.83e-12	3110	4.31e-12
1990	8.18e-12	2092	5.54e-12	2194	3.93e-12	2296	4.54e-12	2398	4.98e-12	2500	5.78e-12	2602	4.16e-12	2704	5.44e-12	2806	3.51e-12	2908	5.29e-12	3010	4.95e-12	3112	4.23e-12
1992	8.26e-12	2094	4.48e-12	2196	3.66e-12	2298	4.34e-12	2400	5.35e-12	2502	5.96e-12	2604	4.29e-12	2706	5.56e-12	2808	3.87e-12	2910	5.26e-12	3012	4.92e-12	3114	4.33e-12
1994	7.81e-12	2096	4.72e-12	2198	3.44e-12	2300	4.84e-12	2402	5.40e-12	2504	5.42e-12	2606	5.01e-12	2708	5.51e-12	2810	4.80e-12	2912	5.19e-12	3014	4.71e-12	3116	4.40e-12
1996	7.11e-12	2098	4.70e-12	2200	3.98e-12	2302	4.90e-12	2404	5.24e-12	2506	4.82e-12	2608	4.97e-12	2710	5.51e-12	2812	5.09e-12	2914	4.98e-12	3016	4.73e-12	3118	4.45e-12
1998	6.72e-12	2100	4.81e-12	2202	4.16e-12	2304	4.85e-12	2406	4.89e-12	2508	5.20e-12	2610	5.15e-12	2712	5.46e-12	2814	5.24e-12	2916	4.83e-12	3018	4.71e-12	3120	4.44e-12
2000	6.77e-12	2102	5.16e-12	2204	4.60e-12	2306	4.76e-12	2408	5.36e-12	2510	5.85e-12	2612	5.60e-12	2714	5.33e-12	2816	5.32e-12	2918	4.84e-12	3020	4.70e-12	3122	4.57e-12
2002	6.80e-12	2104	5.25e-12	2206	4.29e-12	2308	5.05e-12	2410	5.33e-12	2512	5.73e-12	2614	5.71e-12	2716	5.10e-12	2818	5.28e-12	2920	4.82e-12	3022	4.59e-12	3124	4.55e-12
2004	7.95e-12	2106	5.21e-12	2208	4.33e-12	2310	6.53e-12	2412	5.04e-12	2514	5.32e-12	2616	5.25e-12	2718	5.31e-12	2820	5.24e-12	2922	4.85e-12	3024	4.43e-12	3126	4.61e-12
2006	7.74e-12	2108	4.51e-12	2210	4.13e-12	2312	6.27e-12	2414	4.91e-12	2516	5.15e-12	2618	5.19e-12	2720	5.50e-12	2822	5.37e-12	2924	4.89e-12	3026	4.41e-12	3128	4.64e-12
2008	6.70e-12	2110	4.27e-12	2212	3.92e-12	2314	5.12e-12	2416	5.22e-12	2518	5.25e-12	2620	5.63e-12	2722	5.47e-12	2824	5.35e-12	2926	4.91e-12	3028	4.60e-12	3130	4.61e-12
2010	6.68e-12	2112	4.71e-12	2214	3.93e-12	2316	5.43e-12	2418	5.29e-12	2520	5.46e-12	2622	5.74e-12	2724	5.31e-12	2826	5.21e-12	2928	5.00e-12	3030	4.83e-12	3132	4.68e-12
2012	8.08e-12	2114	4.34e-12	2216	3.76e-12	2318	5.27e-12	2420	5.44e-12	2522	4.83e-12	2624	5.74e-12	2726	5.25e-12	2828	5.27e-12	2930	4.87e-12	3032	4.86e-12	3134	4.69e-12
2014	9.18e-12	2116	4.41e-12	2218	3.56e-12	2320	4.90e-12	2422	5.38e-12	2524	4.95e-12	2626	5.77e-12	2728	5.28e-12	2830	5.12e-12	2932	4.71e-12	3034	4.81e-12	3136	4.68e-12
2016	8.00e-12	2118	4.56e-12	2220	3.21e-12	2322	5.14e-12	2424	5.30e-12	2526	5.41e-12	2628	5.62e-12	2730	5.20e-12	2832	4.91e-12	2934	4.71e-12	3036	4.73e-12	3138	4.59e-12
2018	6.48e-12	2120	4.78e-12	2222	3.84e-12	2324	4.96e-12	2426	5.44e-12	2528	5.47e-12	2630	5.61e-12	2732	5.05e-12	2834	5.04e-12	2936	4.78e-12	3038	4.69e-12	3140	4.59e-12
2020	6.92e-12	2122	5.00e-12	2224	3.88e-12	2326	5.51e-12	2428	5.30e-12	2530	5.56e-12	2632	5.41e-12	2734	5.13e-12	2836	5.05e-12	2938	4.77e-12	3040	4.41e-12	3142	4.67e-12
2022	7.47e-12	2124	4.80e-12	2226	3.45e-12	2328	5.18e-12	2430	5.14e-12	2532	5.59e-12	2634	5.34e-12	2736	4.90e-12	2838	5.13e-12	2940	4.74e-12	3042	4.39e-12	3144	4.62e-12
2024	7.13e-12	2126	4.62e-12	2228	3.34e-12	2330	5.31e-12	2432	5.31e-12	2534	5.16e-12	2636	5.51e-12	2738	4.71e-12	2840	5.01e-12	2942	4.81e-12	3044	4.49e-12	3146	4.53e-12
2026	7.47e-12	2128	4.55e-12	2230	3.83e-12	2332	5.46e-12	2434	5.34e-12	2536	4.82e-12	2638	5.66e-12	2740	4.99e-12	2842	4.90e-12	2944	4.69e-12	3046	4.61e-12	3148	4.48e-12
2028	7.06e-12	2130	4.64e-12	2232	3.86e-12	2334	5.68e-12	2436	4.81e-12	2538	5.21e-12	2640	5.45e-12	2742	5.18e-12	2844	———	2946	4.59e-12	3048	4.60e-12	3150	4.54e-12
2030	6.28e-12	2132	4.50e-12	2234	4.59e-12	2336	4.96e-12	2438	5.65e-12	2540	5.58e-12	2642	5.28e-12	2744	5.35e-12	2846	———	2948	4.66e-12	3050	———	3152	4.58e-12
2032	5.67e-12	2134	4.09e-12	2236	4.53e-12	2338	4.40e-12	2440	5.93e-12	2542	5.64e-12	2644	5.51e-12	2746	5.44e-12	2848	———	2950	4.83e-12	3052	———	3154	4.55e-12
2034	6.23e-12	2136	3.95e-12	2238	4.23e-12	2340	4.39e-12	2442	5.07e-12	2544	5.45e-12	2646	5.36e-12	2748	5.29e-12	2850	———	2952	4.63e-12	3054	———	3156	4.57e-12
2036	6.82e-12	2138	4.28e-12	2240	4.67e-12	2342	4.24e-12	2444	5.05e-12	2546	5.25e-12	2648	5.19e-12	2750	5.36e-12	2852	———	2954	4.68e-12	3056	———	3158	4.60e-12
2038	6.20e-12	2140	3.96e-12	2242	4.16e-12	2344	4.35e-12	2446	5.23e-12	2548	5.17e-12	2650	5.42e-12	2752	5.49e-12	2854	———	2956	4.78e-12	3058	———	3160	4.70e-12
2040	6.06e-12	2142	3.77e-12	2244	3.73e-12	2346	4.38e-12	2448	5.39e-12	2550	5.38e-12	2652	5.70e-12	2754	5.36e-12	2856	———	2958	4.94e-12	3060	3.66e-12	3162	4.60e-12
2042	7.28e-12	2144	4.30e-12	2246	3.75e-12	2348	4.06e-12	2450	5.55e-12	2552	5.51e-12	2654	5.57e-12	2756	5.17e-12	2858	4.67e-12	2960	4.84e-12	3062	4.58e-12	3164	4.59e-12
2044	6.90e-12	2146	4.46e-12	2248	3.95e-12	2350	4.35e-12	2452	5.77e-12	2554	5.42e-12	2656	5.40e-12	2758	5.12e-12	2860	4.97e-12	2962	4.66e-12	3064	4.44e-12	3166	4.53e-12
2046	5.87e-12	2148	4.13e-12	2250	4.28e-12	2352	4.46e-12	2454	5.35e-12	2556	5.48e-12	2658	5.35e-12	2760	5.22e-12	2862	4.83e-12	2964	4.66e-12	3066	4.38e-12	3168	4.50e-12
2048	6.35e-12	2150	4.28e-12	2252	4.49e-12	2354	4.74e-12	2456	5.09e-12	2558	5.71e-12	2660	5.34e-12	2762	5.33e-12	2864	4.81e-12	2966	4.79e-12	3068	4.48e-12	3170	4.56e-12
2050	6.34e-12	2152	4.49e-12	2254	4.65e-12	2356	4.05e-12	2458	5.33e-12	2560	5.23e-12	2662	5.37e-12	2764	5.47e-12	2866	5.05e-12	2968	4.91e-12	3070	4.48e-12	3172	4.55e-12
2052	5.97e-12	2154	4.29e-12	2256	4.44e-12	2358	4.43e-12	2460	5.49e-12	2562	5.20e-12	2664	5.45e-12	2766	5.46e-12	2868	5.02e-12	2970	5.00e-12	3072	4.52e-12	3174	4.50e-12
2054	5.85e-12	2156	3.92e-12	2258	4.72e-12	2360	4.83e-12	2462	5.18e-12	2564	5.35e-12	2666	5.03e-12	2768	5.35e-12	2870	5.02e-12	2972	4.84e-12	3074	4.50e-12	3176	4.49e-12
2056	6.03e-12	2158	4.21e-12	2260	4.19e-12	2362	4.78e-12	2464	5.43e-12	2566	5.41e-12	2668	5.03e-12	2770	5.29e-12	2872	5.04e-12	2974	4.89e-12	3076	4.64e-12	3178	4.58e-12
2058	6.70e-12	2160	4.49e-12	2262	4.13e-12	2364	4.31e-12	2466	5.62e-12	2568	5.69e-12	2670	5.23e-12	2772	5.41e-12	2874	5.18e-12	2976	5.01e-12	3078	4.83e-12	3180	4.56e-12
2060	5.58e-12	2162	3.97e-12	2264	4.27e-12	2366	5.19e-12	2468	5.81e-12	2570	5.74e-12	2672	5.45e-12	2774	5.47e-12	2876	5.33e-12	2978	4.96e-12	3080	4.95e-12	3182	4.51e-12
2062	5.72e-12	2164	3.83e-12	2266	4.13e-12	2368	5.59e-12	2470	5.54e-12	2572	5.53e-12	2674	5.51e-12	2776	5.41e-12	2878	5.06e-12	2980	4.95e-12	3082	4.99e-12	3184	4.58e-12
2064	5.73e-12	2166	4.09e-12	2268	4.27e-12	2370	5.18e-12	2472	5.30e-12	2574	5.37e-12	2676	5.46e-12	2778	5.31e-12	2880	4.83e-12	2982	4.88e-12	3084	4.87e-12	3186	4.54e-12
2066	5.28e-12	2168	3.62e-12	2270	4.76e-12	2372	4.56e-12	2474	5.32e-12	2576	5.21e-12	2678	5.42e-12	2780	5.37e-12	2882	4.93e-12	2984	4.85e-12	3086	4.70e-12	3188	4.50e-12
2068	5.37e-12	2170	3.70e-12	2272	4.53e-12	2374	4.77e-12	2476	5.97e-12	2578	5.27e-12	2680	5.18e-12	2782	5.46e-12	2884	4.93e-12	2986	4.67e-12	3088	4.85e-12	3190	4.60e-12
2070	5.26e-12	2172	4.12e-12	2274	4.87e-12	2376	5.12e-12	2478	6.22e-12	2580	4.98e-12	2682	5.17e-12	2784	5.34e-12	2886	5.03e-12	2988	4.70e-12	3090	4.91e-12	3192	4.69e-12
2072	5.23e-12	2174	3.74e-12	2276	4.52e-12	2378	4.46e-12	2480	5.69e-12	2582	4.90e-12	2684	5.31e-12	2786	5.14e-12	2888	5.10e-12	2990	4.63e-12	3092	4.81e-12	3194	4.72e-12
2074	5.78e-12	2176	3.42e-12	2278	3.98e-12	2380	3.91e-12	2482	5.42e-12	2584	5.30e-12	2686	5.37e-12	2788	5.00e-12	2890	4.97e-12	2992	4.63e-12	3094	4.60e-12	3196	4.60e-12
2076	5.75e-12	2178	3.94e-12	2280	4.68e-12	2382	4.28e-12	2484	5.50e-12	2586	5.14e-12	2688	5.25e-12	2790	5.06e-12	2892	4.97e-12	2994	4.69e-12	3096	4.56e-12	3198	4.34e-12


HD 93204 05 V((f)) V=8.44 (B−V)=0.10 E(B−V)=0.42
LAP: LWP 24603 SAP: LWP 24603
FLUX (10^{-12} ERGS CM^{-2} S^{-1} A^{-1})
WAVELENGTH (A)
0
2
4
6
8
10
1800
2000
2200
2400
2600
2800
3000
3200

HD 123299 A0 III V=3.66 (B-V)=-0.05 E(B-V)=-0.02

LAP: SWP 45226 SAP: SWP 45226

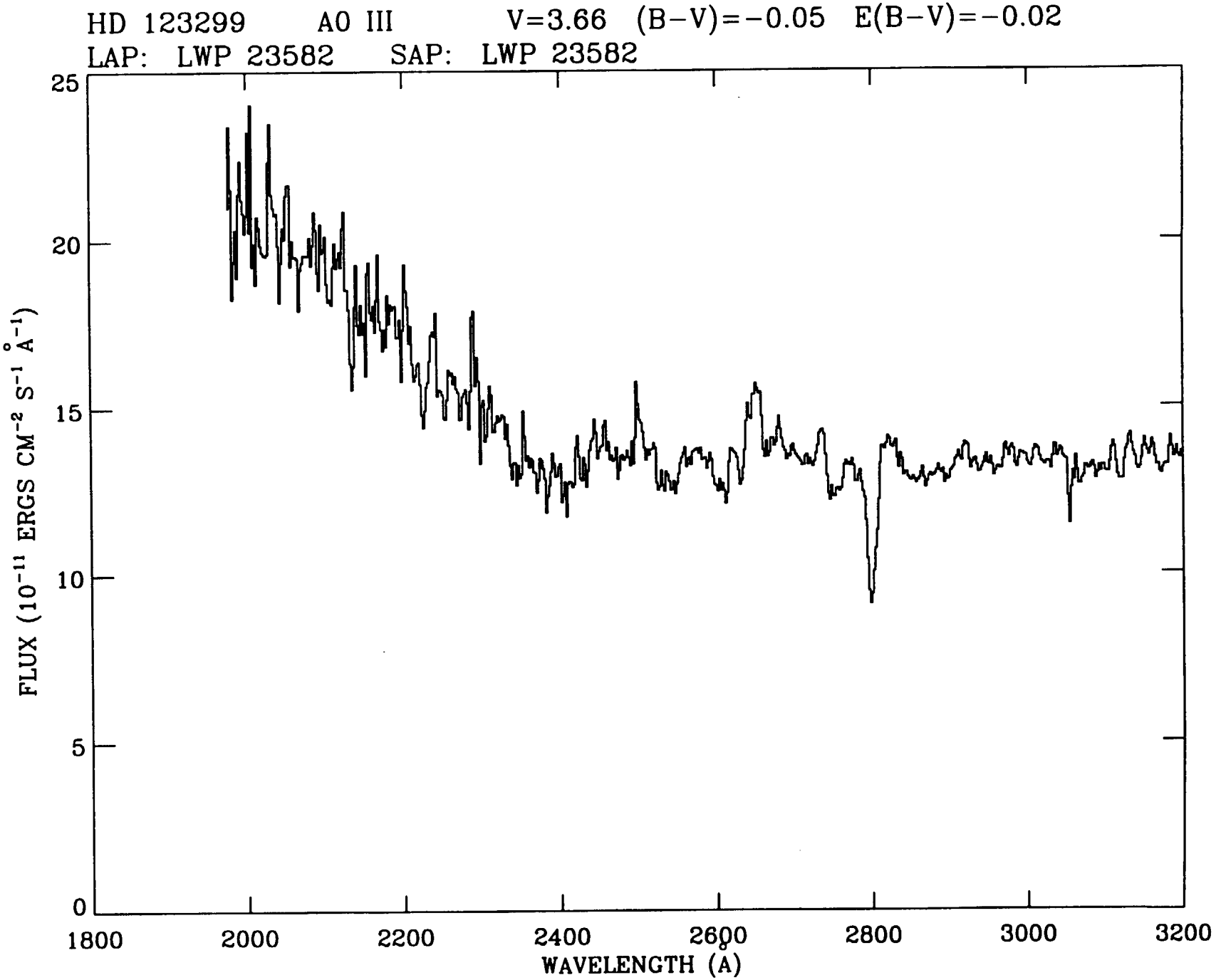
Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux
1152	2.39e-11	1220	1.85e-12	1288	1.22e-10	1356	2.09e-10	1424	2.20e-10	1492	2.47e-10	1560	2.35e-10	1628	2.26e-10	1696	2.22e-10	1764	2.02e-10	1832	2.11e-10	1900	1.91e-10
1154	1.42e-11	1222	1.30e-12	1290	1.34e-10	1358	2.08e-10	1426	2.19e-10	1494	2.64e-10	1562	2.48e-10	1630	2.25e-10	1698	2.21e-10	1766	2.03e-10	1834	2.08e-10	1902	1.92e-10
1156	1.62e-11	1224	-6.96e-13	1292	1.42e-10	1360	1.96e-10	1428	2.12e-10	1496	2.84e-10	1564	2.47e-10	1632	2.29e-10	1700	2.23e-10	1768	2.09e-10	1836	2.05e-10	1904	1.90e-10
1158	2.37e-11	1226	1.07e-12	1294	1.41e-10	1362	1.87e-10	1430	1.96e-10	1498	2.87e-10	1566	2.37e-10	1634	2.31e-10	1702	2.23e-10	1770	2.14e-10	1838	2.00e-10	1906	1.87e-10
1160	1.89e-11	1228	1.19e-12	1296	1.31e-10	1364	1.82e-10	1432	2.03e-10	1500	2.82e-10	1568	2.32e-10	1636	2.29e-10	1704	2.18e-10	1772	2.12e-10	1840	1.95e-10	1908	1.85e-10
1162	1.52e-11	1230	1.21e-12	1298	1.22e-10	1366	1.85e-10	1434	2.10e-10	1502	2.79e-10	1570	2.23e-10	1638	2.19e-10	1706	2.10e-10	1774	2.09e-10	1842	1.91e-10	1910	1.84e-10
1164	1.11e-11	1232	2.56e-12	1300	9.91e-11	1368	1.86e-10	1436	2.18e-10	1504	2.66e-10	1572	2.28e-10	1640	2.23e-10	1708	2.15e-10	1776	2.12e-10	1844	1.95e-10	1912	1.85e-10
1166	7.89e-12	1234	5.86e-12	1302	8.24e-11	1370	1.94e-10	1438	2.32e-10	1506	2.53e-10	1574	2.37e-10	1642	2.26e-10	1710	2.12e-10	1778	2.14e-10	1846	1.98e-10	1914	1.85e-10
1168	-3.25e-12	1236	4.76e-12	1304	7.86e-11	1372	2.03e-10	1440	2.23e-10	1508	2.39e-10	1576	2.55e-10	1644	2.26e-10	1712	2.07e-10	1780	2.13e-10	1848	2.00e-10	1916	1.87e-10
1170	2.08e-12	1238	7.49e-12	1306	8.89e-11	1374	2.05e-10	1442	2.33e-10	1510	2.32e-10	1578	2.55e-10	1646	2.28e-10	1714	2.09e-10	1782	2.08e-10	1850	1.98e-10	1918	1.91e-10
1172	7.66e-12	1240	9.02e-12	1308	1.03e-10	1376	2.06e-10	1444	2.42e-10	1512	2.36e-10	1580	2.40e-10	1648	2.25e-10	1716	2.04e-10	1784	2.09e-10	1852	1.95e-10	1920	1.91e-10
1174	1.47e-11	1242	7.54e-12	1310	1.35e-10	1378	2.22e-10	1446	2.40e-10	1514	2.52e-10	1582	2.53e-10	1650	2.14e-10	1718	2.01e-10	1786	2.13e-10	1854	1.91e-10	1922	1.97e-10
1176	1.10e-11	1244	1.28e-11	1312	1.72e-10	1380	2.10e-10	1448	2.48e-10	1516	2.54e-10	1584	2.49e-10	1652	2.02e-10	1720	2.01e-10	1788	2.22e-10	1856	1.93e-10	1924	1.98e-10
1178	7.47e-12	1246	1.52e-11	1314	1.86e-10	1382	2.16e-10	1450	2.55e-10	1518	2.56e-10	1586	2.45e-10	1654	1.93e-10	1722	2.00e-10	1790	2.33e-10	1858	1.93e-10	1926	1.94e-10
1180	1.10e-11	1248	2.04e-11	1316	1.86e-10	1384	2.15e-10	1452	2.58e-10	1520	2.52e-10	1588	2.40e-10	1656	1.91e-10	1724	1.89e-10	1792	2.30e-10	1860	1.94e-10	1928	1.83e-10
1182	1.00e-12	1250	2.98e-11	1318	1.90e-10	1386	2.12e-10	1454	2.63e-10	1522	2.41e-10	1590	2.40e-10	1658	2.06e-10	1726	1.98e-10	1794	2.23e-10	1862	1.98e-10	1930	1.87e-10
1184	-9.69e-13	1252	3.65e-11	1320	1.90e-10	1388	2.23e-10	1456	2.63e-10	1524	2.22e-10	1592	2.38e-10	1660	2.11e-10	1728	2.02e-10	1796	2.19e-10	1864	2.00e-10	1932	1.89e-10
1186	2.32e-12	1254	3.57e-11	1322	1.75e-10	1390	2.16e-10	1458	2.58e-10	1526	2.21e-10	1594	2.37e-10	1662	2.07e-10	1730	2.02e-10	1798	2.20e-10	1866	2.01e-10	1934	1.89e-10
1188	-5.24e-13	1256	2.87e-11	1324	1.73e-10	1392	2.12e-10	1460	2.54e-10	1528	2.31e-10	1596	2.40e-10	1664	2.20e-10	1732	2.05e-10	1800	2.22e-10	1868	2.05e-10	1936	1.92e-10
1190	-4.16e-12	1258	2.42e-11	1326	1.79e-10	1394	2.02e-10	1462	2.41e-10	1530	2.23e-10	1598	2.38e-10	1666	2.06e-10	1734	2.03e-10	1802	2.24e-10	1870	2.08e-10	1938	1.93e-10
1192	4.63e-12	1260	2.32e-11	1328	1.77e-10	1396	2.09e-10	1464	2.40e-10	1532	2.12e-10	1600	2.34e-10	1668	1.89e-10	1736	2.06e-10	1804	2.21e-10	1872	2.09e-10	1940	1.93e-10
1194	-1.20e-11	1262	3.49e-11	1330	1.66e-10	1398	1.94e-10	1466	2.20e-10	1534	2.30e-10	1602	2.31e-10	1670	1.82e-10	1738	2.13e-10	1806	2.12e-10	1874	2.05e-10	1942	1.95e-10
1196	-2.86e-11	1264	4.94e-11	1332	1.51e-10	1400	2.08e-10	1468	2.26e-10	1536	2.59e-10	1604	2.29e-10	1672	1.95e-10	1740	2.09e-10	1808	2.13e-10	1876	2.03e-10	1944	1.96e-10
1198	-1.43e-11	1266	6.99e-11	1334	1.59e-10	1402	2.10e-10	1470	2.32e-10	1538	2.66e-10	1606	2.32e-10	1674	2.11e-10	1742	2.10e-10	1810	2.18e-10	1878	2.03e-10	1946	1.95e-10
1200	-1.38e-12	1268	8.49e-11	1336	1.92e-10	1404	2.06e-10	1472	2.37e-10	1540	2.67e-10	1608	2.24e-10	1676	2.27e-10	1744	2.11e-10	1812	2.18e-10	1880	2.01e-10	1948	1.95e-10
1202	4.56e-13	1270	9.26e-11	1338	2.24e-10	1406	2.02e-10	1474	2.29e-10	1542	2.67e-10	1610	2.23e-10	1678	2.24e-10	1746	2.15e-10	1814	2.13e-10	1882	1.99e-10	1950	1.96e-10
1204	6.48e-13	1272	8.65e-11	1340	2.32e-10	1408	1.97e-10	1476	2.33e-10	1544	2.59e-10	1612	2.34e-10	1680	2.28e-10	1748	2.17e-10	1816	2.14e-10	1884	2.00e-10	1952	1.96e-10
1206	-2.80e-13	1274	8.73e-11	1342	2.27e-10	1410	2.00e-10	1478	2.27e-10	1546	2.56e-10	1614	2.35e-10	1682	2.28e-10	1750	2.19e-10	1818	2.15e-10	1886	1.97e-10	1954	1.97e-10
1208	5.45e-12	1276	1.05e-10	1344	2.22e-10	1412	2.08e-10	1480	2.15e-10	1548	2.58e-10	1616	2.28e-10	1684	2.25e-10	1752	2.20e-10	1820	2.20e-10	1888	1.93e-10	1956	1.98e-10
1210	6.40e-12	1278	1.19e-10	1346	2.11e-10	1414	2.08e-10	1482	2.23e-10	1550	2.48e-10	1618	2.24e-10	1686	2.23e-10	1754	2.31e-10	1822	2.21e-10	1890	1.91e-10	1958	1.97e-10
1212	3.45e-12	1280	1.33e-10	1348	2.02e-10	1416	2.03e-10	1484	2.35e-10	1552	2.48e-10	1620	2.29e-10	1688	2.24e-10	1756	2.23e-10	1824	2.17e-10	1892	1.91e-10	1960	1.96e-10
1214	2.11e-12	1282	1.39e-10	1350	2.02e-10	1418	2.14e-10	1486	2.55e-10	1554	2.50e-10	1622	2.31e-10	1690	2.27e-10	1758	2.02e-10	1826	2.11e-10	1894	1.89e-10	1962	1.97e-10
1216	6.38e-12	1284	1.34e-10	1352	2.01e-10	1420	2.18e-10	1488	2.56e-10	1556	2.36e-10	1624	2.33e-10	1692	2.28e-10	1760	2.03e-10	1828	2.10e-10	1896	1.90e-10	1964	1.93e-10
1218	3.30e-12	1286	1.23e-10	1354	1.99e-10	1422	2.18e-10	1490	2.47e-10	1558	2.30e-10	1626	2.34e-10	1694	2.22e-10	1762	2.01e-10	1830	2.09e-10	1898	1.90e-10	1966	1.92e-10


HD 123299 A0 III V=3.66 (B−V)=−0.05 E(B−V)=−0.02
LAP: SWP 45226 SAP: SWP 45226
FLUX (10^{-11} ERGS CM^{-2} S^{-1} $\AA^{-1}$)
0
5
10
15
20
25
30
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
WAVELENGTH (A)

HD 123299 A0 III V=3.66 (B-V)=-0.05 E(B-V)=-0.02

LAP: LWP 23582 SAP: LWP 23582

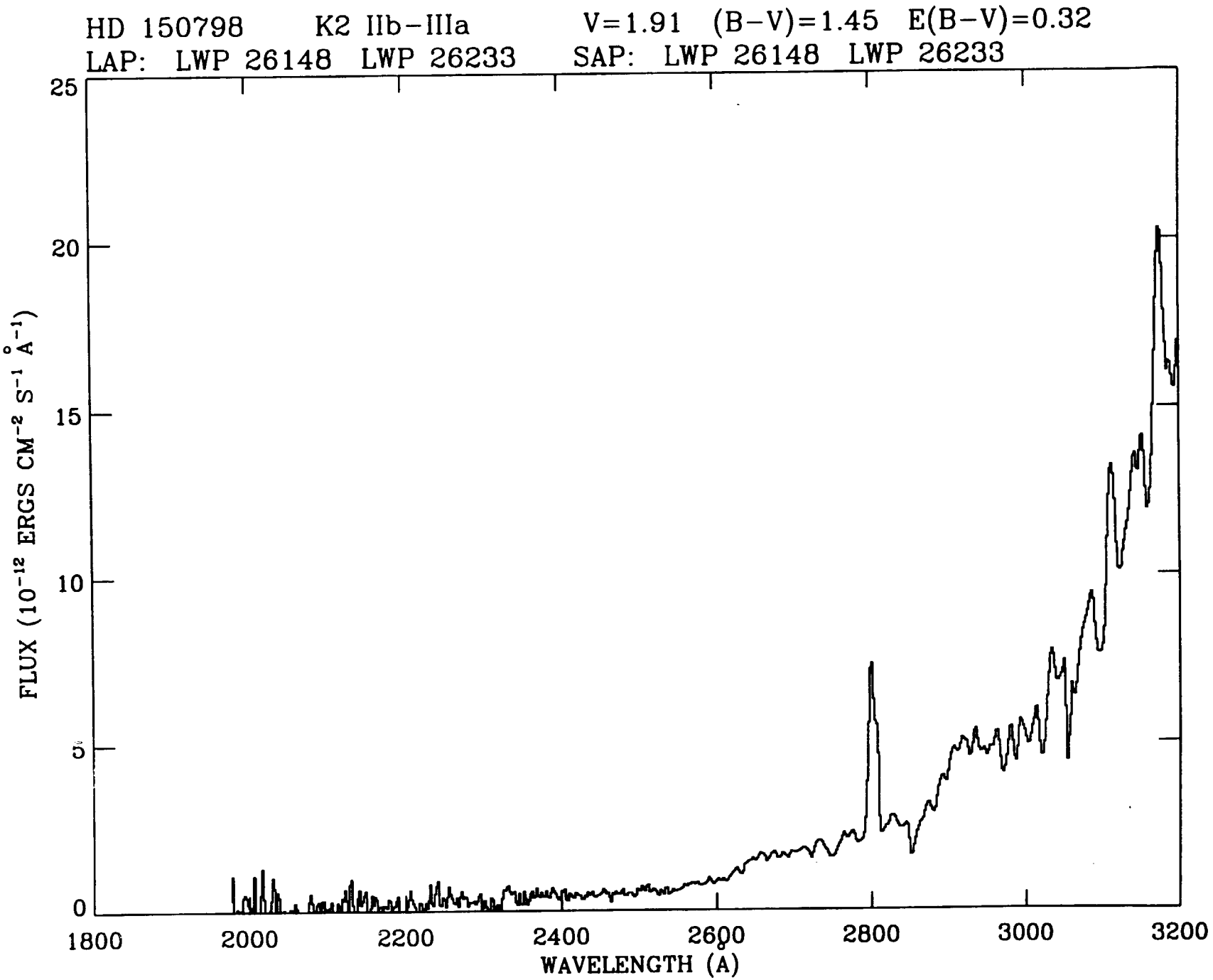
Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux
1976	2.10e-10	2078	1.96e-10	2180	1.84e-10	2282	1.51e-10	2384	1.23e-10	2486	1.37e-10	2588	1.32e-10	2690	1.34e-10	2792	1.16e-10	2894	1.29e-10	2996	1.35e-10	3098	1.32e-10
1978	2.34e-10	2080	2.01e-10	2182	1.75e-10	2284	1.44e-10	2386	1.26e-10	2488	1.35e-10	2590	1.34e-10	2692	1.36e-10	2794	1.04e-10	2896	1.28e-10	2998	1.35e-10	3100	1.30e-10
1980	2.15e-10	2082	1.93e-10	2184	1.81e-10	2286	1.55e-10	2388	1.31e-10	2490	1.32e-10	2592	1.36e-10	2694	1.35e-10	2796	9.48e-11	2898	1.28e-10	3000	1.33e-10	3102	1.30e-10
1982	1.83e-10	2084	1.99e-10	2186	1.79e-10	2288	1.77e-10	2390	1.36e-10	2492	1.40e-10	2594	1.34e-10	2696	1.38e-10	2798	9.10e-11	2900	1.31e-10	3002	1.32e-10	3104	1.30e-10
1984	1.94e-10	2086	2.09e-10	2188	1.80e-10	2290	1.79e-10	2392	1.33e-10	2494	1.33e-10	2596	1.29e-10	2698	1.39e-10	2800	9.39e-11	2902	1.31e-10	3004	1.32e-10	3106	1.33e-10
1986	2.03e-10	2088	2.03e-10	2190	1.81e-10	2292	1.57e-10	2394	1.29e-10	2496	1.41e-10	2598	1.27e-10	2700	1.37e-10	2802	1.01e-10	2904	1.32e-10	3006	1.34e-10	3108	1.37e-10
1988	1.89e-10	2090	1.91e-10	2192	1.71e-10	2294	1.65e-10	2396	1.29e-10	2498	1.58e-10	2600	1.26e-10	2702	1.36e-10	2804	1.07e-10	2906	1.34e-10	3008	1.37e-10	3110	1.39e-10
1990	2.14e-10	2092	1.85e-10	2194	1.71e-10	2296	1.58e-10	2398	1.32e-10	2500	1.51e-10	2602	1.25e-10	2704	1.35e-10	2806	1.13e-10	2908	1.35e-10	3010	1.38e-10	3112	1.38e-10
1992	2.24e-10	2094	2.05e-10	2196	1.77e-10	2298	1.33e-10	2400	1.33e-10	2502	1.46e-10	2604	1.28e-10	2706	1.34e-10	2808	1.22e-10	2910	1.36e-10	3012	1.38e-10	3114	1.33e-10
1994	2.12e-10	2096	1.96e-10	2198	1.58e-10	2300	1.51e-10	2402	1.21e-10	2504	1.45e-10	2606	1.25e-10	2708	1.34e-10	2810	1.33e-10	2912	1.35e-10	3014	1.37e-10	3116	1.29e-10
1996	2.08e-10	2098	1.97e-10	2200	1.73e-10	2302	1.52e-10	2404	1.24e-10	2506	1.43e-10	2608	1.27e-10	2710	1.32e-10	2812	1.38e-10	2914	1.34e-10	3016	1.35e-10	3118	1.28e-10
1998	2.02e-10	2100	2.01e-10	2202	1.93e-10	2304	1.40e-10	2406	1.28e-10	2508	1.38e-10	2610	1.25e-10	2712	1.32e-10	2814	1.38e-10	2916	1.38e-10	3018	1.33e-10	3120	1.28e-10
2000	2.08e-10	2102	1.87e-10	2204	1.85e-10	2306	1.42e-10	2408	1.17e-10	2510	1.34e-10	2612	1.21e-10	2714	1.35e-10	2816	1.37e-10	2918	1.39e-10	3020	1.33e-10	3122	1.28e-10
2002	2.32e-10	2104	1.82e-10	2206	1.80e-10	2308	1.50e-10	2410	1.27e-10	2512	1.37e-10	2614	1.24e-10	2716	1.36e-10	2818	1.39e-10	2920	1.39e-10	3022	1.32e-10	3124	1.34e-10
2004	2.03e-10	2106	1.83e-10	2208	1.69e-10	2310	1.57e-10	2412	1.28e-10	2514	1.36e-10	2616	1.33e-10	2718	1.33e-10	2820	1.41e-10	2922	1.38e-10	3024	1.33e-10	3126	1.37e-10
2006	2.40e-10	2108	1.81e-10	2210	1.75e-10	2312	1.54e-10	2414	1.28e-10	2516	1.37e-10	2618	1.38e-10	2720	1.34e-10	2822	1.40e-10	2924	1.34e-10	3026	1.33e-10	3128	1.38e-10
2008	1.92e-10	2110	1.92e-10	2212	1.63e-10	2314	1.43e-10	2416	1.26e-10	2518	1.37e-10	2620	1.37e-10	2722	1.33e-10	2824	1.38e-10	2926	1.31e-10	3028	1.33e-10	3130	1.41e-10
2010	1.99e-10	2112	1.99e-10	2214	1.58e-10	2316	1.43e-10	2418	1.27e-10	2520	1.39e-10	2622	1.37e-10	2724	1.32e-10	2826	1.38e-10	2928	1.33e-10	3030	1.31e-10	3132	1.42e-10
2012	1.87e-10	2114	1.92e-10	2216	1.60e-10	2318	1.46e-10	2420	1.38e-10	2522	1.38e-10	2624	1.36e-10	2726	1.34e-10	2828	1.39e-10	2930	1.34e-10	3032	1.35e-10	3134	1.38e-10
2014	2.07e-10	2116	1.95e-10	2218	1.63e-10	2320	1.48e-10	2422	1.41e-10	2524	1.27e-10	2626	1.35e-10	2728	1.36e-10	2830	1.40e-10	2932	1.34e-10	3034	1.38e-10	3136	1.36e-10
2016	2.04e-10	2118	1.97e-10	2220	1.64e-10	2322	1.46e-10	2424	1.35e-10	2526	1.25e-10	2628	1.31e-10	2730	1.38e-10	2832	1.34e-10	2934	1.32e-10	3036	1.38e-10	3138	1.35e-10
2018	1.99e-10	2120	1.92e-10	2222	1.57e-10	2324	1.47e-10	2426	1.29e-10	2528	1.26e-10	2630	1.27e-10	2732	1.42e-10	2834	1.32e-10	2936	1.30e-10	3038	1.35e-10	3140	1.32e-10
2020	1.97e-10	2122	2.04e-10	2224	1.48e-10	2326	1.48e-10	2428	1.28e-10	2530	1.31e-10	2632	1.28e-10	2734	1.43e-10	2836	1.36e-10	2938	1.30e-10	3040	1.36e-10	3142	1.31e-10
2022	1.96e-10	2124	2.09e-10	2226	1.44e-10	2328	1.47e-10	2430	1.35e-10	2532	1.26e-10	2634	1.32e-10	2736	1.43e-10	2838	1.34e-10	2940	1.32e-10	3042	1.37e-10	3144	1.31e-10
2024	1.95e-10	2126	1.85e-10	2228	1.49e-10	2330	1.41e-10	2432	1.33e-10	2534	1.25e-10	2636	1.37e-10	2738	1.42e-10	2840	1.29e-10	2942	1.33e-10	3044	1.37e-10	3146	1.34e-10
2026	1.96e-10	2128	1.85e-10	2230	1.56e-10	2332	1.45e-10	2434	1.26e-10	2536	1.31e-10	2638	1.46e-10	2740	1.36e-10	2842	1.30e-10	2944	1.34e-10	3046	1.35e-10	3148	1.37e-10
2028	2.23e-10	2130	1.80e-10	2232	1.58e-10	2334	1.39e-10	2436	1.31e-10	2538	1.30e-10	2640	1.51e-10	2742	1.29e-10	2844	1.30e-10	2946	1.36e-10	3048	1.34e-10	3150	1.40e-10
2030	2.35e-10	2132	1.64e-10	2234	1.64e-10	2336	1.33e-10	2438	1.37e-10	2540	1.28e-10	2642	1.47e-10	2744	1.24e-10	2846	1.29e-10	2948	1.33e-10	3050	1.34e-10	3152	1.38e-10
2032	2.14e-10	2134	1.56e-10	2236	1.72e-10	2338	1.29e-10	2440	1.40e-10	2542	1.25e-10	2644	1.46e-10	2746	1.22e-10	2848	1.28e-10	2950	1.33e-10	3052	1.23e-10	3154	1.36e-10
2034	2.10e-10	2136	1.63e-10	2238	1.73e-10	2340	1.33e-10	2442	1.41e-10	2544	1.25e-10	2646	1.54e-10	2748	1.26e-10	2850	1.28e-10	2952	1.35e-10	3054	1.15e-10	3156	1.35e-10
2036	2.08e-10	2138	1.80e-10	2240	1.71e-10	2342	1.34e-10	2444	1.46e-10	2546	1.28e-10	2648	1.54e-10	2750	1.23e-10	2852	1.29e-10	2954	1.32e-10	3056	1.25e-10	3158	1.37e-10
2038	2.08e-10	2140	1.93e-10	2242	1.79e-10	2344	1.27e-10	2446	1.42e-10	2548	1.24e-10	2650	1.57e-10	2752	1.23e-10	2854	1.28e-10	2956	1.29e-10	3058	1.30e-10	3160	1.40e-10
2040	1.99e-10	2142	1.75e-10	2244	1.54e-10	2346	1.33e-10	2448	1.35e-10	2550	1.27e-10	2652	1.56e-10	2754	1.25e-10	2856	1.27e-10	2958	1.30e-10	3060	1.28e-10	3162	1.38e-10
2042	1.82e-10	2144	1.72e-10	2246	1.56e-10	2348	1.29e-10	2450	1.37e-10	2552	1.30e-10	2654	1.54e-10	2756	1.25e-10	2858	1.28e-10	2960	1.32e-10	3062	1.35e-10	3164	1.34e-10
2044	1.94e-10	2146	1.81e-10	2248	1.55e-10	2350	1.30e-10	2452	1.38e-10	2554	1.33e-10	2656	1.55e-10	2758	1.25e-10	2860	1.28e-10	2962	1.32e-10	3064	1.31e-10	3166	1.32e-10
2046	2.04e-10	2148	1.72e-10	2250	1.54e-10	2352	1.49e-10	2454	1.39e-10	2556	1.35e-10	2658	1.47e-10	2760	1.25e-10	2862	1.30e-10	2964	1.31e-10	3066	1.26e-10	3168	1.32e-10
2048	2.01e-10	2150	1.76e-10	2252	1.47e-10	2354	1.41e-10	2456	1.45e-10	2558	1.36e-10	2660	1.37e-10	2762	1.28e-10	2864	1.32e-10	2966	1.31e-10	3068	1.27e-10	3170	1.30e-10
2050	2.13e-10	2152	1.60e-10	2254	1.47e-10	2356	1.34e-10	2458	1.46e-10	2560	1.38e-10	2662	1.35e-10	2764	1.32e-10	2866	1.29e-10	2968	1.34e-10	3070	1.28e-10	3172	1.29e-10
2052	2.17e-10	2154	1.90e-10	2256	1.53e-10	2358	1.36e-10	2460	1.37e-10	2562	1.32e-10	2664	1.40e-10	2766	1.34e-10	2868	1.26e-10	2970	1.38e-10	3072	1.29e-10	3174	1.31e-10
2054	2.17e-10	2156	1.94e-10	2258	1.62e-10	2360	1.32e-10	2462	1.40e-10	2564	1.34e-10	2666	1.35e-10	2768	1.32e-10	2870	1.27e-10	2972	1.39e-10	3074	1.32e-10	3176	1.32e-10
2056	1.93e-10	2158	1.79e-10	2260	1.60e-10	2362	1.35e-10	2464	1.34e-10	2566	1.35e-10	2668	1.36e-10	2770	1.33e-10	2872	1.29e-10	2974	1.37e-10	3076	1.32e-10	3178	1.32e-10
2058	2.00e-10	2160	1.76e-10	2262	1.61e-10	2364	1.34e-10	2466	1.36e-10	2568	1.33e-10	2670	1.41e-10	2772	1.32e-10	2874	1.30e-10	2976	1.35e-10	3078	1.31e-10	3180	1.32e-10
2060	1.95e-10	2162	1.81e-10	2264	1.57e-10	2366	1.31e-10	2468	1.34e-10	2570	1.36e-10	2672	1.41e-10	2774	1.34e-10	2876	1.29e-10	2978	1.38e-10	3080	1.31e-10	3182	1.37e-10
2062	1.95e-10	2164	1.73e-10	2266	1.60e-10	2368	1.30e-10	2470	1.34e-10	2572	1.37e-10	2674	1.38e-10	2776	1.32e-10	2878	1.29e-10	2980	1.38e-10	3082	1.32e-10	3184	1.41e-10
2064	1.95e-10	2166	1.82e-10	2268	1.56e-10	2370	1.24e-10	2472	1.38e-10	2574	1.37e-10	2676	1.39e-10	2778	1.27e-10	2880	1.30e-10	2982	1.37e-10	3084	1.33e-10	3186	1.37e-10
2066	1.79e-10	2168	1.96e-10	2270	1.55e-10	2372	1.28e-10	2474	1.28e-10	2576	1.38e-10	2678	1.44e-10	2780	1.27e-10	2882	1.31e-10	2984	1.33e-10	3086	1.32e-10	3188	1.34e-10
2068	1.91e-10	2170	1.76e-10	2272	1.46e-10	2374	1.35e-10	2476	1.31e-10	2578	1.36e-10	2680	1.47e-10	2782	1.29e-10	2884	1.32e-10	2986	1.32e-10	3088	1.28e-10	3190	1.36e-10
2070	1.94e-10	2172	1.74e-10	2274	1.47e-10	2376	1.34e-10	2478	1.35e-10	2580	1.38e-10	2682	1.43e-10	2784	1.31e-10	2886	1.31e-10	2988	1.34e-10	3090	1.30e-10	3192	1.38e-10
2072	1.96e-10	2174	1.67e-10	2276	1.54e-10	2378	1.32e-10	2480	1.36e-10	2582	1.34e-10	2684	1.40e-10	2786	1.27e-10	2888	1.30e-10	2990	1.36e-10	3092	1.32e-10	3194	1.35e-10
2074	1.96e-10	2176	1.74e-10	2278	1.54e-10	2380	1.29e-10	2482	1.34e-10	2584	1.34e-10	2686	1.38e-10	2788	1.24e-10	2890	1.31e-10	2992	1.36e-10	3094	1.30e-10	3196	1.34e-10
2076	1.95e-10	2178	1.68e-10	2280	1.56e-10	2382	1.18e-10	2484	1.35e-10	2586	1.35e-10	2688	1.37e-10	2790	1.23e-10	2892	1.27e-10	2994	1.36e-10	3096	1.32e-10	3198	1.36e-10


HD 123299 A0 III V=3.66 (B−V)=−0.05 E(B−V)=−0.02
LAP: LWP 23582 SAP: LWP 23582
FLUX (10^{-11} ERGS CM^{-2} S^{-1} $\AA^{-1}$)
0
5
10
15
20
25
1800
2000
2200
2400
2600
2800
3000
3200
WAVELENGTH (A)

HD 150798 K2 IIb-IIIa V=1.91 (B-V)=1.45 E(B-V)=0.32

LAP: LWP 26148 LWP 26233 SAP: LWP 26148 LWP 26233

Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux	Wave	Flux
1976	3.38e-13	2078	5.25e-13	2180	3.24e-13	2282	2.55e-13	2384	3.96e-13	2486	5.22e-13	2588	8.73e-13	2690	1.61e-12	2792	2.74e-12	2894	3.89e-12	2996	5.46e-12	3098	7.68e-12
1978	1.07e-12	2080	2.69e-13	2182	-1.16e-13	2284	2.37e-13	2386	5.44e-13	2488	5.32e-13	2590	9.79e-13	2692	1.56e-12	2794	3.83e-12	2896	3.85e-12	2998	5.34e-12	3100	7.88e-12
1980	-8.50e-14	2082	3.94e-14	2184	1.33e-13	2286	2.54e-13	2388	6.93e-13	2490	5.32e-13	2592	9.25e-13	2694	1.67e-12	2796	5.60e-12	2898	4.12e-12	3000	5.13e-12	3102	8.39e-12
1982	-5.25e-13	2084	-7.12e-15	2186	1.60e-13	2288	2.99e-13	2390	6.01e-13	2492	4.61e-13	2594	8.43e-13	2696	1.76e-12	2798	7.21e-12	2900	4.44e-12	3002	4.95e-12	3104	9.62e-12
1984	7.74e-14	2086	2.20e-13	2188	3.18e-13	2290	2.05e-13	2392	5.18e-13	2494	4.08e-13	2596	7.90e-13	2698	1.74e-12	2800	7.37e-12	2902	4.66e-12	3004	4.98e-12	3106	1.11e-11
1986	2.83e-14	2088	2.78e-13	2190	4.51e-13	2292	2.93e-13	2394	4.02e-13	2496	4.66e-13	2598	8.34e-13	2700	1.74e-12	2802	6.29e-12	2904	4.80e-12	3006	5.21e-12	3108	1.23e-11
1988	3.84e-14	2090	-7.27e-14	2192	-1.78e-13	2294	4.47e-13	2396	3.33e-13	2498	6.52e-13	2600	8.92e-13	2702	1.73e-12	2804	5.65e-12	2906	4.86e-12	3008	5.48e-12	3110	1.31e-11
1990	-2.50e-13	2092	3.06e-13	2194	-4.09e-13	2296	5.16e-13	2398	4.05e-13	2500	6.09e-13	2602	9.37e-13	2704	1.75e-12	2806	5.54e-12	2908	4.77e-12	3010	5.67e-12	3112	1.33e-11
1992	4.25e-13	2094	3.27e-13	2196	6.22e-15	2298	8.10e-14	2400	5.99e-13	2502	5.86e-13	2604	8.97e-13	2706	1.76e-12	2808	4.66e-12	2910	4.72e-12	3012	6.00e-12	3114	1.30e-11
1994	5.12e-13	2096	-1.31e-13	2198	-1.37e-13	2300	1.05e-13	2402	5.59e-13	2504	7.24e-13	2606	8.75e-13	2708	1.80e-12	2810	2.78e-12	2912	4.77e-12	3014	6.03e-12	3116	1.22e-11
1996	4.22e-13	2098	7.74e-14	2200	2.20e-14	2302	3.19e-13	2404	6.39e-13	2506	6.71e-13	2608	9.52e-13	2710	1.85e-12	2812	2.31e-12	2914	4.94e-12	3016	5.62e-12	3118	1.09e-11
1998	2.18e-13	2100	4.16e-14	2202	1.58e-13	2304	1.24e-13	2406	3.35e-13	2508	5.81e-13	2610	9.02e-13	2712	1.86e-12	2814	2.33e-12	2916	5.14e-12	3018	4.97e-12	3120	1.02e-11
2000	1.44e-13	2102	1.19e-13	2204	3.61e-13	2306	-1.40e-13	2408	3.08e-13	2510	7.29e-13	2612	8.61e-13	2714	1.84e-12	2816	2.42e-12	2918	5.12e-12	3020	4.61e-12	3122	1.01e-11
2002	6.04e-14	2104	2.85e-13	2206	6.27e-13	2308	3.62e-14	2410	5.17e-13	2512	7.64e-13	2614	9.05e-13	2716	1.79e-12	2818	2.51e-12	2920	5.06e-12	3022	4.62e-12	3124	1.02e-11
2004	1.50e-13	2106	-3.41e-13	2208	3.59e-13	2310	3.98e-13	2412	4.79e-13	2514	5.50e-13	2616	9.91e-13	2718	1.75e-12	2820	2.52e-12	2922	5.03e-12	3024	4.99e-12	3126	1.07e-11
2006	1.07e-12	2108	-5.69e-13	2210	2.37e-13	2312	3.39e-13	2414	4.10e-13	2516	5.75e-13	2618	1.05e-12	2720	1.64e-12	2822	2.62e-12	2924	4.81e-12	3026	5.61e-12	3128	1.10e-11
2008	-3.09e-13	2110	-2.36e-13	2212	1.35e-13	2314	-4.06e-14	2416	3.89e-13	2518	6.41e-13	2620	1.11e-12	2722	1.55e-12	2824	2.79e-12	2926	4.60e-12	3028	6.35e-12	3130	1.13e-11
2010	-5.02e-13	2112	2.52e-13	2214	-2.33e-13	2316	-7.31e-14	2418	5.40e-13	2520	6.26e-13	2622	1.17e-12	2724	1.71e-12	2826	2.82e-12	2928	4.65e-12	3030	7.01e-12	3132	1.15e-11
2012	-4.02e-13	2114	1.73e-13	2216	-1.02e-13	2318	1.84e-13	2420	5.07e-13	2522	5.71e-13	2624	1.23e-12	2726	1.88e-12	2828	2.81e-12	2930	4.95e-12	3032	7.58e-12	3134	1.19e-11
2014	5.12e-13	2116	-1.87e-13	2218	2.48e-13	2320	1.75e-13	2422	4.62e-13	2524	4.73e-13	2626	1.26e-12	2728	2.00e-12	2830	2.75e-12	2932	5.33e-12	3034	7.75e-12	3136	1.24e-11
2016	1.30e-12	2118	4.01e-13	2220	2.28e-13	2322	3.87e-14	2424	4.53e-13	2526	4.53e-13	2628	1.18e-12	2730	2.06e-12	2832	2.63e-12	2934	5.40e-12	3036	7.59e-12	3138	1.30e-11
2018	3.86e-13	2120	3.36e-13	2222	-1.07e-13	2324	3.79e-13	2426	3.44e-13	2528	6.09e-13	2630	1.10e-12	2732	2.08e-12	2834	2.55e-12	2936	5.07e-12	3038	7.17e-12	3140	1.35e-11
2020	-4.52e-13	2122	6.57e-13	2224	7.70e-14	2326	6.36e-13	2428	3.43e-13	2530	5.54e-13	2632	1.09e-12	2734	2.07e-12	2836	2.47e-12	2938	4.81e-12	3040	6.84e-12	3142	1.36e-11
2022	-1.94e-13	2124	3.33e-13	2226	2.47e-13	2328	6.14e-13	2430	4.49e-13	2532	4.75e-13	2634	1.17e-12	2736	2.02e-12	2838	2.46e-12	2940	4.73e-12	3042	6.83e-12	3144	1.32e-11
2024	-2.90e-14	2126	-7.91e-14	2228	8.67e-14	2330	7.18e-13	2432	4.13e-13	2534	6.72e-13	2636	1.37e-12	2738	1.92e-12	2840	2.48e-12	2942	4.76e-12	3044	6.91e-12	3146	1.31e-11
2026	6.57e-14	2128	8.04e-13	2230	3.26e-13	2332	7.55e-13	2434	5.44e-13	2536	6.78e-13	2638	1.40e-12	2740	1.83e-12	2842	2.53e-12	2944	4.82e-12	3046	7.01e-12	3148	1.36e-11
2028	3.46e-13	2130	9.56e-13	2232	8.05e-13	2334	5.82e-13	2436	4.66e-13	2538	4.88e-13	2640	1.45e-12	2742	1.78e-12	2844	2.59e-12	2946	4.73e-12	3048	7.16e-12	3150	1.41e-11
2030	1.02e-12	2132	1.87e-13	2234	2.41e-13	2336	5.05e-13	2438	4.95e-13	2540	5.05e-13	2642	1.48e-12	2744	1.68e-12	2846	2.53e-12	2948	4.61e-12	3050	7.43e-12	3152	1.41e-11
2032	7.12e-13	2134	-2.07e-13	2236	1.67e-13	2338	5.61e-13	2440	5.63e-13	2542	5.48e-13	2644	1.49e-12	2746	1.59e-12	2848	2.10e-12	2950	4.71e-12	3052	6.03e-12	3154	1.36e-11
2034	-8.90e-14	2136	-2.40e-13	2238	5.24e-13	2340	5.82e-13	2442	4.37e-13	2544	6.37e-13	2646	1.56e-12	2748	1.61e-12	2850	1.64e-12	2952	4.88e-12	3054	4.44e-12	3156	1.26e-11
2036	5.82e-13	2138	4.12e-13	2240	7.60e-13	2342	2.65e-13	2444	4.00e-13	2546	5.78e-13	2648	1.51e-12	2750	1.60e-12	2852	1.67e-12	2954	4.86e-12	3056	5.14e-12	3158	1.20e-11
2038	4.27e-13	2140	6.48e-13	2242	9.03e-13	2344	1.81e-13	2446	4.48e-13	2548	5.72e-13	2650	1.49e-12	2752	1.65e-12	2854	1.92e-12	2956	4.87e-12	3058	5.76e-12	3160	1.21e-11
2040	-6.66e-13	2142	1.92e-13	2244	1.93e-13	2346	5.23e-13	2448	4.66e-13	2550	6.02e-13	2652	1.55e-12	2754	1.76e-12	2856	2.13e-12	2958	5.09e-12	3060	6.75e-12	3162	1.25e-11
2042	-8.60e-13	2144	3.01e-13	2246	1.64e-13	2348	1.94e-13	2450	4.90e-13	2552	6.17e-13	2654	1.64e-12	2756	1.87e-12	2858	2.34e-12	2960	5.31e-12	3062	6.50e-12	3164	1.35e-11
2044	4.48e-14	2146	4.86e-13	2248	4.15e-13	2350	1.91e-13	2452	5.48e-13	2554	6.40e-13	2656	1.71e-12	2758	1.97e-12	2860	2.47e-12	2962	5.34e-12	3064	6.41e-12	3166	1.50e-11
2046	1.27e-15	2148	6.08e-13	2250	3.39e-13	2352	5.83e-13	2454	6.53e-13	2556	6.75e-13	2658	1.68e-12	2760	2.06e-12	2862	2.60e-12	2964	5.01e-12	3066	6.72e-12	3168	1.66e-11
2048	-2.94e-13	2150	-4.82e-14	2252	1.22e-13	2354	3.66e-13	2456	6.04e-13	2558	7.74e-13	2660	1.67e-12	2762	2.19e-12	2864	2.65e-12	2966	4.53e-12	3068	7.23e-12	3170	1.82e-11
2050	-9.02e-14	2152	-3.62e-13	2254	4.29e-13	2356	1.88e-13	2458	5.15e-13	2560	7.58e-13	2662	1.60e-12	2764	2.31e-12	2866	2.73e-12	2968	4.15e-12	3070	7.70e-12	3172	1.95e-11
2052	7.22e-14	2154	1.03e-13	2256	7.34e-13	2358	3.09e-13	2460	5.42e-13	2562	7.28e-13	2664	1.46e-12	2766	2.23e-12	2868	2.93e-12	2970	4.08e-12	3072	8.06e-12	3174	2.03e-11
2054	6.28e-14	2156	4.85e-13	2258	5.14e-13	2360	5.22e-13	2462	4.04e-13	2564	7.90e-13	2666	1.53e-12	2768	2.15e-12	2870	3.08e-12	2972	4.26e-12	3074	8.34e-12	3176	2.02e-11
2056	-1.11e-13	2158	1.96e-13	2260	3.80e-13	2362	5.90e-13	2464	2.69e-13	2566	7.76e-13	2668	1.59e-12	2770	2.17e-12	2872	3.19e-12	2974	4.57e-12	3076	8.52e-12	3178	1.92e-11
2058	2.48e-13	2160	4.44e-13	2262	2.47e-13	2364	4.01e-13	2466	5.18e-13	2568	8.21e-13	2670	1.69e-12	2772	2.25e-12	2874	3.20e-12	2976	5.03e-12	3078	8.70e-12	3180	1.79e-11
2060	9.41e-14	2162	3.58e-13	2264	2.25e-13	2366	4.29e-13	2468	4.81e-13	2570	8.21e-13	2672	1.72e-12	2774	2.32e-12	2876	3.06e-12	2978	5.43e-12	3080	8.89e-12	3182	1.69e-11
2062	-2.58e-14	2164	-2.64e-13	2266	4.01e-13	2368	6.81e-13	2470	5.69e-13	2572	7.77e-13	2674	1.75e-12	2776	2.35e-12	2878	2.97e-12	2980	5.46e-12	3082	9.12e-12	3184	1.61e-11
2064	-3.59e-13	2166	1.35e-13	2268	1.43e-13	2370	4.53e-13	2472	5.06e-13	2574	8.14e-13	2676	1.67e-12	2778	2.25e-12	2880	2.92e-12	2982	5.01e-12	3084	9.36e-12	3186	1.63e-11
2066	-1.46e-13	2168	1.58e-13	2270	4.41e-13	2372	4.18e-13	2474	4.92e-13	2576	8.39e-13	2678	1.57e-12	2780	2.08e-12	2882	3.03e-12	2984	4.54e-12	3086	9.46e-12	3188	1.63e-11
2068	-1.11e-13	2170	-4.10e-13	2272	5.92e-13	2374	5.53e-13	2476	5.03e-13	2578	7.57e-13	2680	1.56e-12	2782	2.00e-12	2884	3.37e-12	2986	4.44e-12	3088	9.22e-12	3190	1.59e-11
2070	-5.04e-13	2172	1.71e-13	2274	3.76e-13	2376	4.20e-13	2478	5.82e-13	2580	7.44e-13	2682	1.61e-12	2784	2.03e-12	2886	3.67e-12	2988	4.83e-12	3090	8.51e-12	3192	1.56e-11
2072	-3.70e-13	2174	1.56e-13	2276	4.28e-13	2378	4.30e-13	2480	6.33e-13	2582	7.75e-13	2684	1.70e-12	2786	2.06e-12	2888	3.86e-12	2990	5.44e-12	3092	8.00e-12	3194	1.56e-11
2074	-1.16e-13	2176	9.75e-14	2278	4.14e-13	2380	5.94e-13	2482	4.49e-13	2584	7.71e-13	2686	1.69e-12	2788	2.11e-12	2890	3.98e-12	2992	5.68e-12	3094	7.67e-12	3196	1.62e-11
2076	2.98e-13	2178	3.60e-13	2280	1.43e-13	2382	4.21e-13	2484	4.46e-13	2586	8.16e-13	2688	1.64e-12	2790	2.28e-12	2892	4.00e-12	2994	5.61e-12	3096	7.65e-12	3198	1.69e-11


HD 150798 K2 IIb-IIIa V=1.91 (B-V)=1.45 E(B-V)=0.32
LAP: LWP 26148 LWP 26233 SAP: LWP 26148 LWP 26233
FLUX (10^{-12} ERGS CM^{-2} S^{-1} $\AA^{-1}$)
25
20
15
10
5
0
1800
2000
2200
2400
2600
2800
3000
3200
WAVELENGTH (A)

REPORT DOCUMENTATION PAGE

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13. ABSTRACT *(Maximum 200 words)*

Under this program, the Principal Investigator continued observations of normal stars in order to fulfill the following two goals: (1) to provide a stellar library as complete as practical, which will be able to support astronomical research by the scientific community long into the future, and (2) to obtain a sufficient sample of stars to guard against variability and peculiarity, and to allow a finite range of temperature, gravity, and metallicity in a given spectral type-luminosity class combination.

14. SUBJECT TERMS

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